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ABSTRACT

An experiment was conducted based on an information service for planners run in conjunction with Geo Abstracts Limited. Forth-eight styles of abstracting journals were produced which, although based on the same source material, differed in depth of coverage, frequency of publication, content of entry, and whether an index was included. One style of journal was produced with each possible combination of these parameters. Each style was sent for a trial period to four users who marked items not noted and followed up from each issue and completed a questionnaire at the end of the experiment. The results show a distinction between expressed preferences on the parameters studied and the styles which proved most useful in practice. In particular, although most users said they would prefer abstracts, the citation-only styles were most useful. The bulk of a publication appears to be an important factor in determining usability. The experiment also demonstrated a demand for a much wider range of information from researchers and teachers than from practitioners. (Author/SL)

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Design of Information Systems in the Social Sciences

Research Reports
Series B no. 3

The relationship between usefulness and style of secondary publication

An experimental information service for planners

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Bath University
November 1974

PREFACE

The research project Design of Information Systems in the Social Sciences (DISISS) was carried out between 1971 and 1975 with the support of a grant from British Library Research and Development Department (formerly, Office for Scientific and Technical Information). The central team was based at the University of Bath, and assisted by researchers at the Polytechnic of North London School of Librarianship, and the Open University. The results of the research are reported in two series of papers. These reports can be obtained individually on loan from the British Library Lending Division, Boston Spa; a limited number are available for purchase from the Secretary, The Library, Bath University, Claverton Down, BATH BA2 7AY.

The present report describes an experiment carried out in 1973, in which the parameters of an abstracting service were varied in experimental publications and user reaction assessed. The experiment was conceived by Mr M.B. Line and Mr J.M. Brittain; it was designed in detail by Dr W.Y. Arms (Open University), who also arranged the detail of the experimental service with Professor K. Clayton of Geo Abstracts Limited. Professor and Mrs Clayton organized the production of the service at the University of East Anglia. Miss B. Skelton and Mr Brittain recruited the sample of users, with assistance from Mrs B. White (Edinburgh University), and the Bath team produced the follow-up questionnaire and organized its dissemination and return. Miss Skelton and Mr Brittain drafted much of the material in chapters 1-3. The rest of the report was written by Mrs C.R. Arms (Open University), who also carried out the analyses.

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ABSTRACT

This report describes an experiment based on an information service for planners which was run in conjunction with Geo Abstracts Limited. Forty-eight styles of abstracting journal were produced which, although based on the same source material, differed in depth of coverage (three levels), frequency of publication (one-weekly, three-weekly and nine-weekly), content of entry (abstract, keywords or only citation) and whether an index was included. With a minor exception one style of journal was produced with each possible combination of these parameters. Each style was sent for a trial period to four planners who had agreed to take part in the experiment. These users were asked to mark on sheets provided with each issue the items which they noted and followed up, and to complete a questionnaire at the end of the experimental period. About 70% of users filled in the questionnaire, and about 55% returned sheets which were at least partially completed.

The results show a distinction between expressed preferences on the parameters varied and the styles which proved most useful in practice. In particular, although most users said they would prefer abstracts, the styles with only citations were most useful. The bulk of a publication appears to be an important factor in determining usability. The experiment also demonstrated a demand for a much wider range of information from researchers and teachers than from practitioners.

1.0 INTRODUCTION

1.1 Objectives

The evaluation of information services is an integral part of the research towards the Design of Information Systems in the Social Sciences (DISISS). The Investigation into Information Requirements of the Social Sciences[1] (INFROSS) showed that users are usually unable to state what improvements might be made in information services in order to satisfy their needs more fully, in the absence of an actual service to which they can refer. If information systems are to be developed and improved, it is therefore necessary to create new services which can be tested in practice. In fact this is how services have developed in the past; usually a commercial body or professional organization has established a new service, or changed an existing one, to meet a supposed market or need. The service has survived or not, according to the market.

There were two serious disadvantages in this procedure. First, the need is rarely identified and stated clearly in advance; development therefore takes place largely on intuition, although studies such as INFROSS can do something to elucidate needs and reduce the range of possibilities. Second, while any service has to pay its way unless it can justify a subsidy, the market is a poor test of effectiveness for information services, because they are usually acquired by libraries and receive no subsequent practical evaluation; it is quite possible, and perhaps common, for an indexing or abstracting service to remain on library shelves totally unused. Moreover, if it is used, this may be because people can only use what there is available, however inadequate and capable of improvement it may be. One way in which progress might be made is to design experimental services systematically to test specific hypotheses, and evaluate them as carefully as possible; a large part of the DISISS project has been devoted to this. Some evaluation has been attempted of ongoing services; this is reported elsewhere (Final Reports B1 and B2). This report deals with an experiment set

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[1] This was carried out at the University of Bath between 1968 and 1970.

up to examine the design of abstracting and indexing services.

It is a reasonable assumption that published indexing and abstracting services will constitute an important part of the total information system for the foreseeable future. It is therefore important that the overall pattern of such services is carefully planned, disciplines being appropriately grouped and allocated between services. Other parts of DISISS should provide some guidance here (Final Reports A6 and B6). It is equally important that individual services should be carefully designed.

An indexing and abstracting service has several main parameters which can be varied.

(1) Breadth and depth of coverage - (a) range of journals, books, reports, etc., from which material may be included; (b) degree of selection of items from these journals, etc.

(2) Content of entry - entries may contain only the bare bibliographical details, or may include abstracts, which may themselves be of varying length.

(3) Index - there may or may not be an index, and it may be more or less detailed.

(4) Frequency of issue

(5) Up-to-dateness - which obviously depends partly on frequency of issue

(6) Quality of production - which can vary from a stapled set of duplicated sheets to a professionally designed printed product.

Obviously each of these has economic aspects; increased frequency, greater depth in indexing or fulness of abstracting, broader coverage, and superior quality of production all cost more. The important question is therefore, what combination, within a given cost limit, related to a reasonable sale price, is the most satisfactory for users. Would they, for example, sacrifice quality for frequency, or up-to-dateness for depth? An alternative question would be what is the optimum combination, and what would it cost.

At present, abstracting and indexing services exhibit great variety in these parameters, but users seldom have a choice of alternative combinations within their own disciplines. It is highly improbable that all the combinations that exist are in any sense optimal, and it is possible that none of them is. There is no means of knowing without experiment whether one combination is preferable to others, and if so which.

A combination of parameters found to suit one service will not necessarily be right for one in a different discipline or one aimed at a different type of user. However, an experiment with one service might produce some results so clear cut that they might be expected to apply generally, and would also test the methodology of such an experiment. In the light of the results further experiments in other areas could be made. On the other hand, there might be no clear preferences at all; even a negative finding would still be of interest and value since it would give producers a wider range within which to operate.

For a valid experiment to be set up, considerable resources were necessary. Firstly, the subject matter on which to base the experimental service had to be selected and the relevant material made accessible. The experiment required editorial and other staff, production facilities, and a means of distribution to a fairly large number of users, for a period of up to six months.

DISISS could clearly not design a new service from scratch. The co-operation of an existing service was therefore sought, whose producers would be willing to vary the parameters experimentally over a given period.

1.2 Setting up the experimental information service

During 1972 contact was made with Geo Abstracts Ltd and agreement was reached to operate an experimental service using material from sections of Geo Abstracts relevant to planning. From 1966 to December 1972 Geo Abstracts, formerly Geographical Abstracts, was produced in four sections; A - Geomorphology, B - Biogeography and Climatology,

C - Economic Geography, and D - Social Geography and Cartography. At the beginning of 1973 a new section was introduced, F - Regional and Community Planning, and the existing four sections were reorganized, so that the 1973 Geo Abstracts was produced in six sections: A - Landforms and the Quaternary, B - Biogeography and Climatology, C - Economic Geography, D - Social Geography and Cartography, E - Sedimentology, and F - Regional and Community Planning. With the introduction of a new section of abstracts, Geo Abstracts considered the production of an experimental service as a desirable test to evaluate not only the usefulness of the new section, but also the usefulness of Geo Abstracts generally as a secondary service.

Each section of Geo Abstracts is issued six times a year. The service relies on a large number of voluntary abstractors from all over the world. There is one editor to each section and the overall editor of the service is Professor Kenneth Clayton, Professor of Geography at the University of East Anglia, from where the service is run.

It was decided that the experimental service should be for environmental planners, and known as the Experimental Information Service for Planners. Environmental planners form a large and relatively easily identifiable group of social scientists working in practice, research and teaching. The fact that the experiment was aimed at planners meant that the results would be of direct relevance to the research project, Organization of Information for Planning (OIP), being carried out (also with the aid of a grant from OSTI) at the University of Edinburgh. The purpose of the OIP project is to ascertain the structure and composition of the information base of planning and to develop efficient methods of organising and disseminating it.

2.0 DESIGN AND CONDUCT OF THE EXPERIMENT

2.1 The parameters used in the experiment

The purpose of the experiment was to observe, and as far as possible measure, user preferences for the design of a secondary information service. User preferences are one reasonable measure of usability and also of value of the service. Four parameters were chosen for the experiment. These were:

(1) Coverage
(2) Content of entry
(3) Frequency
(4) Presence or absence of an index.

Other parameters which DISISS considered but rejected, were parameters relating to the format and presentation of the service. For instance, size of paper, colour of paper, type and size of print, and page layout, may all affect the usability of a service. However, the resources necessary to test all these parameters were not available. It was decided to test the four parameters that related mainly to the bibliographical nature of the service rather than the physical format. A further parameter was also considered for inclusion in the experiment - currency of material in the service - but was dropped because it proved too difficult to control within the existing production routine of Geo Abstracts. Material is published in Geo Abstracts in the order in which it is received from the abstractors. Sometimes there is a delay of several months before material is received from an abstractor. Also Geo Abstracts uses material from other secondary services, particularly some published abroad, and there is sometimes a considerable delay between the first appearance of the work and an abstract of it in Geo Abstracts. If currency was to be tested a very tight control system would have to be devised whereby some material was deliberately delayed and some

was abstracted as quickly as possible. To have set up such a system would have caused too much disruption in the regular production of Geo Abstracts, as well as complicating the experiment with the attendant danger of making the other results less valid or reliable.

(1) Coverage

Material for Geo Abstracts is selected by the editor, Professor Clayton, who scans approximately 2,000 journals (see Geo Abstracts List of Journals Abstracted) and assigns relevant articles to the appropriate section (see 1.2). Articles from any journal may appear in any section. The only criterion for inclusion is subject matter; no discrimination by quality is used. The list of journals abstracted was extended for the purpose of the experimental service, but many of the additional journals will continue to be covered in the normal production of Geo Abstracts. Sources used to select the additional journals were the Queen's University Science Library, Belfast; the Royal Town Planning Institute's Library; Sheffield University Planning and Landscape Library; and a list of planning journals[1] (see Appendix C) produced by the Organization of Information for Planning (OIP) project at Edinburgh University.

Books, reports and other published and semi-published material are also abstracted. Books are selected mainly from publishers' lists, and other publicity material. British and US books are more thoroughly covered than others, because they are better publicised.

Foreign language material is covered, but expense and difficulty of translation restrict the amount of such material. For a short period Geo Abstracts undertook many translations of Soviet materials, but found they were used by few people. In general abstracts were excluded from the experiment if they were considered too old. For the 1972 issues, this meant that all 1970 or earlier material was excluded; for the 1973 issues, 1971 and earlier material was excluded.

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[1] The list was produced by taking all citations from articles relevant to British planning in 42 journals published in 1970.

For the experimental service three different coverage patterns were used:

P Coverage based on the usual production of section F of Geo Abstracts - Regional and Community Planning. Section F covers the following topics: planning problems, planning techniques and theory, national planning, regional and economic planning, urban planning techniques and practice, rural planning, transportation planning, innovation, environmental planning and resource allocation, social and community planning, and planning law and administration. This section of Geo Abstracts is aimed at two major groups of users; practising planners in institutional or private practice, and research workers and others interested in urban, regional, and environmental planning processes. The policy of the editor is "to complement, rather than duplicate, existing information and abstracting services by concentrating upon regional, urban, and environmental planning theory and practice rather than upon detailed and very local implementation or engineering schemes. Such material is included where it is of general relevance."

Q Coverage based on mainstream planning material. Core journals were defined as those in which more than two-thirds of articles are concerned with planning. Articles included in coverage P which came from core journals were included in coverage Q. Non-journal material from coverage P was included if it was regarded as mainstream and easily located. Most of this material was books from UK or USA. Major HMSO publications were also included.

R Coverage of urban planning only. Material from other sections, particularly C - Economic Geography, and D - Social Geography and Cartography as well as section F, was included if it was regarded as particularly relevant to urban planning. Examples of the additional topics covered are urban sociology, air pollution, and industrial location in urban areas.

The experimental service aimed to test the usefulness of the three coverage patterns. Originally it was hoped that the experiment would be able to test coverage patterns by using a selection of specific journal titles. This proved infeasible as Geo Abstracts select articles from any journal for any section of the abstracts. It had been proposed that the list of planning journals produced by citation studies (see Appendix C) conducted by the Organization of Information for Planning (OIP) Project at Edinburgh University would be used in the experiment. However, in order to gain some idea of the frequency of occurrence of individual journals in Geo Abstracts, a count was made of the number of abstracts taken from each journal in sections C and D in 1970 and 1971 and in the first two issues in section F in 1973. The results of this count are shown in Appendix D. The journals in Appendix D that also occur in the OIP frequency list of cited journals are marked on that list (Appendix C). Only a small proportion of journals were in common; 15 per cent of journals used in section D occurred in the OIP list, 19 per cent in section C, and 9 per cent in section F. There is thus a large variation between journals considered by Geo Abstracts to be of relevance to planning and the journals identified by citation studies as being relevant to planning. In particular, material in sociological and statistical journals does not appear in Geo Abstracts. However, this variation should not have affected too greatly this part of our experiment, which was concerned as much with variation of levels of coverage as with quality of coverage.

(2) Content of entry

Three forms of entry were used for the service. The first form was a full abstract. These abstracts were produced in the same manner as for the regular Geo Abstracts: by Geo Abstracts staff, from another secondary service, or by the author of the article. The second form of entry was title plus keywords (see Index below). The keywords were selected by a single editor. This method is found by Geo Abstracts to be the cheapest and easiest way of achieving some consistency. The third form of entry consisted of titles alone with no keywords.

(3) Frequency of issue

The service was produced in weekly, three-weekly, and nine-weekly frequencies. Altogether nine weekly issues were produced, six three-weekly issues, and three nine-weekly issues. It was hoped that these running periods would be adequate for each user to make valid judgements.

(4) Index

Half the issues were produced with an author and subject index. The subject index was based on keywords from the article title or body of the abstract and was produced by computer.

2.2 Styles of publication

The four parameters were combined to give forty-eight publication styles. All combinations were used except that coverage Q was not produced in weekly issues, because the number of items in each issue would have been very small. Each style was denoted by a four-character code made up as follows:

Coverage:

- P - all section F
- Q - core material from section F
- R - urban planning material from sections C, D and F

Content of entry:

- A - full abstract
- K - citation and keywords
- C - citation

Frequency of issue:

- 1 - weekly (nine issues)
- 3 - three-weekly (six issues)
- 9 - nine-weekly (three issues)

Index:

- Y - index
- N - no index

Thus, PC3N indicates the three-weekly publication without index, with coverage of section F of Geo Abstracts, and with entries consisting of citations only.

2.3 Organization, production and distribution of the service

Four copies of each of the forty-eight publications styles were distributed, each user receiving only one style. The list of 192 planners was compiled by the DISISS team (see section 3.0), who were also responsible for answering queries from users, chasing up replies and analysing the evaluation data. The service was produced and distributed by Geo Abstracts Ltd at Norwich, who employed a typist specifically for the experiment in addition to their normal staff.

The dates of publication of each issue and the number of items in each issue are given in Table 1. The experiment ran for 27 weeks. The three-weekly service ran for the first 18 weeks, and was cumulated into the first two nine-weekly issues. The last nine-weekly issue was a cumulation of the weekly service which ran during the last nine weeks of the period.

The typing load in the early weeks proved too great and the number of entries in the later three-weekly issues was reduced. The number of entries in the last nine weeks was increased again by the inclusion of more ephemeral material to make the weekly issues a reasonable size. The author indexes were compiled by means of a simple card index. The subject indexes were compiled by computer except that those for the last two weekly issues were compiled by hand, owing to a strike by computer operators at the University of East Anglia. Some of the other clerical procedures were more time-consuming than had been estimated originally. For instance, collation, coding and dispatch of the twelve variations of the one-weekly issues took four people two hours each week. Each weekly issue took between two and three hours to print and was done on a specific day each week. The three-weekly issues took longer but the load was spread over the three weeks. The print-room staff at the University of East Anglia photographed the plates, whilst the actual printing was done by Geo Abstracts Ltd.

TABLE 1

NUMBERS OF ITEMS IN ISSUES OF THE
EXPERIMENTAL INFORMATION SERVICE FOR PLANNERS

		3-weekly					9-weekly		
		P	Q	R			P	Q	R
1	25 Oct	178	80	126					
2	15 Nov	141	52	129	1	8 Dec	451	176	368
3	6 Dec	129	44	113					
4	27 Dec	111	66	99					
5	19 Jan	116	58	91	2	11 Feb	347	172	310
6	9 Feb	120	48	120					

		1-weekly					
		P	R				
1	16 Feb	60	43				
2	23 Feb	51	34				
3	1 Mar	42	41				
4	8 Mar	51	57	3	14 Apr	441	192	376
5	15 Mar	54	36				
6	22 Mar	53	37				
7	29 Mar	38	41				
8	5 Apr	41	35				
9	12 Apr	51	50				

2.4 Evaluation of the service

Two methods of evaluation were used; one was a specific indication of items considered by the user to be of interest and use to him, recorded on a tear-off sheet at the front of each issue; and the other was a general assessment, by a questionnaire sent out with the last issue of the service. Users were asked to return the questionnaires and the tear-off

sheets in a pre-paid envelope to the DISISS team. The questionnaires, an example of a tear-off sheet, and the accompanying letter, are all shown in Appendix E. It was originally hoped that rating scales could be used in the questionnaire, perhaps using the scales being developed by Dr A.W. Clark of the Tavistock Institute. However, Dr Clark's work on rating scales was not completed in time for use in the questionnaire. The tear-off sheet was included so that users could record their actual uses, tear off the sheet for subsequent mailing and retain the service itself for future reference.

3.0 THE SAMPLE

With forty-eight different styles of publication a sample size of a multiple of forty-eight was required. It was decided that 192 (4 X 48) was as large a sample as could be recruited, although ideally the sample would have been larger. It was desirable that these should be from planners engaged in practice, teaching and research in a wide variety of environments.

The Royal Town Planning Institute List of Members does not indicate whether planners work in practice, research or teaching. A list of 190 planners was, however, available from the Organization of Information for Planning project, with a breakdown of the type of work carried out. A letter was sent to all 190, asking them to take part in the experiment and asking them also to send names and addresses of any of their colleagues who were interested in participating. The letter is reproduced in Appendix F. In all, 105 of these expressed willingness and gave 60 additional names. As 192 planners were needed to take part in the experiment, it was decided that further planners should be sampled from the Royal Town Planning Institue List of Members, even though this gave no indication of the type of work in which each planner was engaged. Of the 76 planners chosen at random from this list only 10 were willing to take part. A further 8 names of persons working in planning research were obtained from OIP because it became apparent that researchers were under-represented. Finally, the Municipal Year Book 1972 was used to obtain 23 more names selected at random.

Altogether, 297 planners were sent letters in order to find 192 who were willing to take part. Very few of those who did not wish to take part in the experiment sent letters to this effect; the majority did not reply. Seven planners took so long to reply that, although willing to participate, they had to be turned down because by then the quota of 192 had been filled. Some people who took part in the experiment did so because their colleagues had passed the letter on to them; usually only one or two individuals from a planning department or a university indicated their willingness to take part, but one department was represented in the final sample by as many as 10 people. Table 2 summarizes how the final sample of 192 planners was obtained.

TABLE 2

OBTAINING THE SAMPLE

	OIP's main list	OIP's extra list	Random sample from R.T.P.I. membership list 1971	Random sample from Municipal Year Book 1972	Total
No. contacted	190	8	76	23	297
No. replies 'yes'	105	6	10	12	133
No. replies 'no'	5	-	2	2	9
No. turned down, replied too late	5	-	-	2	7
No. of additional names given by colleagues	60	-	6	-	66
No. of letters returned because of wrong address	-	-	8	-	8

Total number required for sample = 192

It was not possible to balance the numbers involved primarily in practice, research or teaching exactly between the three service frequencies because the first issues of the three-weekly services were ready for circulation before the sample had been fully recruited. The proportion of practitioners receiving the three-weekly services is lower than for the other frequencies.

TABLE 3

THE SAMPLE BY PRIMARY NATURE OF WORK

Nature of work	1-weekly service		3-weekly service		9-weekly service		Total	
Practice	24	50.0%	29	40.3%	36	50.0%	89	46.4%
Research	9	18.8%	19	26.4%	9	12.5%	37	19.3%
Teaching	11	22.9%	20	27.8%	21	29.2%	52	27.1%
Not known beforehand	4	8.3%	4	5.6%	6	8.3%	14	7.3%
TOTAL	48		72		72		192	

The imbalance between practising planners and academics also shows up when the sample is grouped by the type of employing body (Table 4 on p.15).

4.0 STATISTICAL ANALYSIS I

4.1 Basic tabulations of questionnaire responses

A questionnaire (see Appendix E) was sent to each participant after he had received all the issues of the experimental service. Of the 192 participants, 129 returned questionnaires, giving a response rate of 67.8%. As mentioned in section 2.1, four service parameters were varied, and each participant was allocated a code to describe the service received. The four parameters are:

(i) Coverage (P, planning; Q; core journals only; R, urban planning)

TABLE 4

THE SAMPLE BY EMPLOYING BODY

Employing body	1-weekly service		3-weekly service		9-weekly service		Total	
	N	%	N	%	N	%	N	%
Central Government (DOE)			2	2.8	1	1.4	3	1.6
Regional authorities	1	2.1	2	2.8	6	8.3	9	4.7
County authorities	6	12.5	14	19.4	14	19.4	34	17.7
G.L.C	1	2.1	6	8.3			7	3.6
Development authorities (includes new towns)			1	1.4	6	8.3	7	3.6
Borough authorities	19	39.6	3	4.2	9	12.5	31	16.1
Universities	7	14.6	21	29.2	14	19.4	42	21.9
Polytechnics	2	4.2	6	8.3	9	12.5	17	8.9
Colleges of Art	2	4.2	2	2.8	1	1.4	5	2.6
Research Institutions	2	4.2	11	15.3	4	5.6	17	8.9
Private practice					3	4.2	3	1.6
Other			3	4.2			3	1.6
Not known beforehand	8	16.7	1	1.4	5	6.9	14	7.3
TOTAL	48		72		72		192	
Subtotals								
Government	27	56.3%	28	38.9%	36	50.0%	91	47.4%
Academic bodies	13	27.1%	40	55.6%	28	38.9%	81	42.2%

(ii) length of item (A, abstracts; K, title and keywords; C, title only)

(iii) Frequency of publication (1-, 3-, 9-weekly)

(iv) Index (Y, with author and subject index; N, with no index).

All code combinations were used except 1-weekly services with coverage Q which would have had very few items in each issue. Each service type was sent to four participants and the numbers of responses are given in Table 5. Three people returned some of the tear-off sheets which accompanied the individual issues but did not complete the questionnaire. In Table 6 the response rates for particular parameter values are given.

TABLE 5

NUMBERS OF RESPONSES BY SERVICE TYPE

PA1Y 3	-	RA1Y 3
PA1N 3	-	RA1N 3
PA3Y 4	QA3Y 2	RA3Y 3
PA3N 4	QA3N 2	RA3N 3
PA9Y 2	QA9Y 3	RA9Y 3
PA9N 3	QA9N 2	RA9N 4
PK1Y 3	-	RK1Y 3
PK1N 2	-	RK1N 3
PK3Y 2	QK3Y 4	RK3Y 3
PK3N 2	QK3N 3	RK3N 2
PK9Y 2	QK9Y 2	RK9Y 1
RK9N 2	QK9N 2	RK9N 4
PC1Y 3	-	RC1Y 4
PC1N 4	-	RC1N 3
PC3Y 4	QC3Y 2	RC2Y 0
PC3N 3	QC3N 3	RC3N 3
PC9Y 3	QC9Y 4	RC9Y 1
PC9N 1	QC9N 3	RC9N 1

TABLE 6

RESPONSE RATES FOR INDIVIDUAL PARAMETERS

Overall response rate 67.8%

Parameter	Sent	Returned	Response rate
P	72	50	69.4%
Q	48	32	66.7%
R	72	47	65.2%
A	64	47	73.5%
B	64	40	62.5%
C	64	42	65.7%
I	48	37	77.0%
J	72	49	68.0%
O	72	43	59.7%
Y	96	64	66.7%
N	96	65	67.7%

In the remainder of this section the questions will be stated as in the questionnaire and brief results given for each question, independent of responses to any other question. Unless otherwise stated, percentages are of the number of respondents (129).

Nature of work: (mark as many boxes as applicable)

practice	75	58.1%
teaching	50	38.8%
research	76	58.9%

More specific combinations of these three aspects of planning (P, T, R) are:

Nature of work	No. of respondents	
P	43	33.3%
TR	30	23.2%
R	19	14.7%
PR	17	13.3%
PTR	10	7.7%
T	5	3.9%
PT	5	3.9%

Do you subscribe to, or use, Geo Abstracts?

yes	31	24.1%
no	98	76.0%

Do you use regularly any other information service?

yes	64	49.5%
no	65	50.3%

If 'yes' please name:

Apart from respondent's' own library services, the information services that were used by more than one respondent were:

Department of Environment Library Bulletin	27 users
Planning and Transportation Abstracts (GLC)	14 users
Town and Country Planning Association Bulletin	13 users
Quarterly Bulletin of GLC Intelligence Unit	3 users

The DoE Library Bulletin was therefore used by 43% of the respondents who said they regularly used an information service other than Geo Abstracts.

Combining the responses to these two questions, 58.9% of the sample normally use an information service.

How did you use the Experimental Service you received?

read thoroughly	31	24.1%
scanned through	83	64.3%
glanced at	9	7.0%
did not use	1	0.8%
no answer	5	3.9%

Do you think you received issues...

	Overall	1-weekly	3-weekly	9-weekly
too frequently?	30 23.2%	18 48.6%	9 18.2%	3 7.0%
at about the right frequency?	83 64.2%	18 48.6%	35 71.4%	30 69.8%
not frequently enough?	13 10.0%	1 2.7%	4 8.3%	8 18.6%
no answer?	3 2.3%		1 2.1%	2 4.7%

(percentages are of column totals)

If 'too frequently' or 'not frequently enough', please suggest reasons for your reply:

From those who thought that issues were received too frequently, the most usual reasons were:

(i) Issues piled up before there was time to read them, or to follow up items

(ii) It is time-consuming and inefficient to scan many small issues when the chance of finding something of interest in any issue is low

Other comments were;

(iii) Small issues are easily mislaid

(iv) For building up a long-term bibliography, consolidated lists are of more use than many of small issues

Reason (i) was given for both 1-weekly and 3-weekly services.

The two reasons given for the issues not being frequent enough were:

(i) The volume of material was too large to wade through in one session and was therefore inhibiting

(ii) Some of the material was out of date and had already been obtained through other channels

Reason (ii) was given for both 3-weekly and 9-weekly services.

How frequently would you ideally wish to receive issues?

weekly	14	10.8%
fortnightly	11	8.5%
monthly	60	46.5%
every 2 months	27	20.9%
quarterly	13	10.1%
no answer	4	3.1%

Entry format

Questions about the entry format differed according to the entry format of the service received by the participant. The first question was of the form:

Did you find the entry format adequate for assessing the relevance of material in the service?

	Overall		A		K		C	
not adequate	25	19.3%	3	6.4%	11	26.8%	11	26.2%
sometimes adequate	68	52.7%	20	42.6%	20	48.7%	29	69.0%
completely adequate	35	27.1%	24	51.1%	9	21.9%	2	4.8%
no answer	1	0.8%			1	2.4%		

(percentages are of column totals)

Abstracts appear to be inadequate less often and more often completely adequate then either 'title' or 'title with keywords'. The inclusion of keywords with titles appears to increase the proportion of people completely satisfied but still leave about the same proportion dissatisfied.

Participants whose service included abstracts (A) were asked if they would have been satisfied with:

	yes	no	no answer
titles and keywords?	14	32	1
titles alone?	3	43	1

Participants whose service provided titles and keywords (K) were asked if they would have:

	yes	no	no answer
preferred abstracts?	24	16	0
been satisfied with titles alone	3	37	0

Participants whose service provided titles only were asked if they would have preferred:

	yes	no	no answer
abstracts?	30	10	2
titles and keywords?	31	10	1

Of these, 23 would appreciate either expansion of the entry format and 3 would not want either. The remainder are equally divided between preferring abstracts but not keywords, or keywords but not abstracts.

Index

Participants whose service included an author index and a subject index were asked if they used the indexes, and, if not, whether this was because they did not need to or because the index was not easy to use.

	Author index		Subject index		
used	14	21.9%	34	53.1%	(percentages of
not used	48	75.0%	27	42.2%	respondents
no answer	2	3.1%	3	4.7%	with indexes)
did not need to	37	77.1%	16	59.2%	(percentages of
not easy to use	2	4.2%	7	25.9%	respondents not
no answer	9	18.8%	4	14.8%	using the specified
					index)

They were also asked if they would have preferred any other type of index.

yes	20
no	34
no answer	10

Among the types of index suggested the most frequent (8 mentions) was a more reliable subject index[1]. Suggestions ranged from a standard library classification to division into broad topics such as 'rural planning' and 'urban planning'. Several people suggested that grouping items under subject headings would be very convenient. A cumulative subject index once or twice a year was also requested. Other suggestions, in order of frequency, were:

geographical index (4)
keyword index (3)
grouping by journal or issuing body (2)
combined subject/author index (1)
grouping by type of material (e.g. book, article) (1)
author and title index pointing to abstracts (1)

---

[1] The subject index provided was generated automatically using the title and keywords derived from the body of the article. There was no thesaurus of keywords for use in indexing; instead, all keywords were chosen by the editor.

The participants whose service did not include an index were asked if they would have found an index useful:

yes	52	80.0%	(percentages are of the
no	10	15.4%	number of respondents whose
no answer	3	4.6%	service did not include an index)

If yes, which of the following indexes would you have used?

author	9	17.3%	(percentages are of
subject	45	86.6%	those respondents
geographical	11	21.2%	requiring an
keyword	23	44.2%	index)

Did you find the number of entries in each issue...

too few?	24	18.6%
about right?	66	51.2%
too many?	31	24.1%
no answer?	8	6.2%

The number of entries in each issue is affected by two of the service parameters, frequency and coverage. The services for each combination of these parameters had average numbers of entries per issue as given below.

		frequency		
		1-weekly	3-weekly	9-weekly
coverage	P	49	136	413
	Q	-	58	180
	R	42	113	351

It is of interest to breakdown the overall figures in three ways: (a) by coverage; (b) by frequency; and (c) by number of entries per issue.

(a) by coverage

	number of entries					
	too few		about right		too many	
P	8	17.4%	26	56.5%	12	26.1%
Q	8	25.8%	17	54.8%	6	19.6%
R	8	18.2%	23	52.2%	13	29.6%

(percentages are of row totals)

(b) by frequency

	number of entries					
	too few		about right		too many	
1-weekly	13	35.2%	22	59.4%	2	5.4%
3-weekly	8	18.6%	26	60.5%	9	20.9%
9-weekly	3	7.3%	18	44.0%	20	48.7%

(percentages are of row totals)

(c) by number of entries per issue

For this purpose it seems reasonable, from the earlier table of number of entries per issue, to divide the parameter combinations into three groups.

	number of entries					
	too few		about right		too many	
P1, Q3, R1	19	36.8%	30	56.6%	4	7.5%
P3, Q9, R3	4	9.5%	27	64.4%	11	26.2%
P9, R9	1	3.8%	9	34.8%	16	61.5%

(percentages are of row totals)

In the first table the Q row is not completely comparable with the other rows because the Q1 service was omitted. However the similarity of the P and R rows implies that the reaction to the number of entries is independent of the difference in the two types of coverage. In tables (b) and (c) a diagonal pattern is clearly observable, with a considerable proportion finding the number of entries in the small frequent issues too small, and a very high proportion finding the number in the largest issues too great. As might be expected, this pattern is more pronounced in the breakdown by entries per issue than in that

by frequency. As a general conclusion, it appears that most planners find 100 entries too many to read through at one session and a good proportion find 50 too few to justify the effort. A satisfactory number seems to be between 100 and 200.

Coverage

Would you have liked the service to cover...

(Mark as many boxes as appropriate)

	overall		by coverage type P	Q	R
more journals?	59	45.8%	25	15	19
more books?	48	38.2%	19	10	19
more reports etc.?	79	61.3%	27	18	34
fewer journals?	12	9.3%	3	3	6
fewer books?	9	7.0%	3	2	4
fewer reports etc?	7	5.4%	4	1	2
No. of respondents with coverage type			50	32	47

Taking percentages of the number of respondents, the breakdown by coverage type of the demands for greater coverage are:

	P	Q	R
more journals?	50.0%	47.0%	40.4%
more books?	38.0%	31.1%	40.4%
more reports etc?	54.0%	56.2%	72.3%

The journal sources used for coverage Q were a subset of those used for coverage P, including only journals with over two-thirds of their articles relevant to planning. The fringe journals omitted for Q do not appear to have been very important. For coverage R, a wider range of journals was used, with articles being selected only if they were relevant to urban planning. More of the respondents who received this type of coverage appear to have found the journal range too great and fewer of them required more journals to be covered.

Did you find the amount of foreign language material covered...

too little?	14	10.9%
about right?	52	40.6%
too much?	46	35.9%
no answer	16	12.5%

Please give any other comments you have about the choice of items covered:

There were several comments which were made a number of times. They are listed with, where appropriate, numbers of occurrences broken down by coverage type.

(i) Much material too difficult to obtain (P, 2; R, 3)
(ii) Unsatisfactory mixture of research and journalistic weekly magazines (P,2; Q, 2; R, 1)
(iii) More material always welcome (5)
(iv) Indication of attempted coverage requested (4)
(v) Reports and semi-published material most useful as this information is not available elsewhere (7)
(vi) Little of practical value to planning (R, 2)
(vii) Not comprehensive enough (P, 3; Q, 5; R, 3)
(viii) Too wide (P, 2; R, 1)
(ix) Insufficient foreign material (American, 1; European, 2)
(x) Editorial judgement of value wanted (2)

Particular requests for subjects not adequately covered included:

(i) Rural planning (Q, 1; R, 2)
(ii) Transportation planning (P, 1)
(iii) Demography (R,1)
(iv) Design (Q, 1)
(v) Journal of Planning and Environment Law, Architects Journal (P, 1)

From the figures and comments on coverage a few general conclusions can be drawn. At least half the respondents would like greater coverage, especially of reports and semi-published material, for which the information services currently available appear to be inadequate. Foreign material

is not used by many planners, although some individuals regard it as important. Some of the recipients of coverage R disliked the bias towards urban planning, but these were people specifically interested in rural planning who would clearly not subscribe to a service for urban planners. However, at least one urban planner requested additional peripheral material in the field of population studies and other wider topics.

Taken as a whole do you rate the Experimental Service which you have received as...

of no use to you?	4	3.1%
of little use?	40	31.0%
moderately useful?	66	51.2%
very useful?	17	13.2%
no answer	2	1.5%

How do you think that the Experimental Service could be improved to make it of more use to you?

The most frequent suggestions are given below with comments. Unless otherwise stated the distribution of the suggestions over the service parameters was fairly even.

(i) Group entries under broad subject headings (24) (Mostly from 3- and 9-weekly services)

(ii) Increase coverage (14) (None from 9-weekly service)

(iii) Print on index cards or in other form suitable for incorporating into a personal filing system (6) (None from coverage Q. Mostly from 3- and 9-weekly services)

(iv) Improve layout (5) (Title to be prominent rather than author)

(v) Increase coverage of reports and semi-published materials (5)

(vi) Provide facility for obtaining photo-copies (3)

(vii) Emphasize practical rather than academic planning (3)

In addition to these, there were comments on indexing reinforcing people's response to the questions on that topic and a few requests for

more sophisticated services such as a computer system for generating bibliographies, or a system which sorted by subject area and sent subscribers information only on their chosen areas. Another request which appeared in several guises was that the selection policy and range of source material considered should be explicitly stated. A fixed, regularly updated keyword thesaurus was also suggested.

Would you subscribe to the Experimental Service if it were to become fully operational?

yes	69	53.5%
no	51	39.5%
no answer	9	7.0%

This question is somewhat ambiguous in that several people commented that their organization would subscribe although they would not want to personally. Since it is not clear which way those who did not comment interpreted the question, these figures have little reliability. However, they are likely to under- rather than over- estimate the proportion who would subscribe either personally or through their organization.

If you were to subscribe, how much per annum would you be prepared to pay for a personal subscription?

up to £2.50	22	17.1%
£2.50 - £5.00	37	28.6%
£5.00 - £10.00	14	10.9%
£10.00 - £15.00	2	1.5%
£15.00 - £20.00	2	1.5%
more than £20.00	1	0.8%
no answer	51	39.5%

Again many people answered this question for a department subscription rather than a personal one, and the figures have little value. It is however clear that a service aimed at individuals rather than libraries should not be priced about five pounds (at 1973 values).

Would you prefer

a publication issued once a fortnight, with rudimentary indexes and no abstracts,	24	18.8%
or		
a publication issued every two months with full abstracts and indexes?	97	75.8%
no answer	7	5.5%

Would you prefer

a publication issued once a fortnight but with very limited coverage,	14	10.9%
or		
a publication issued every two months but with a wide coverage?	96	75.0%
no answer	18	14.1%

Would you prefer

a publication with wide coverage but no abstracts,	54	42.2%
or		
a publication with limited coverage but good abstracts?	57	44.5%
no answer	17	13.3%

For a further discussion of this question see section 4.5.

If the basic publication was issued every two months, with reasonable coverage and good abstracts and indexes, would you be prepared to pay extra for an additional publication, issued fortnightly, consisting of titles only, with keyword indexes?

yes	26	20.3%
no	89	69.5%
no answer	13	10.2%

4.2 Distribution of service parameters by nature of work of questionnaire respondents

Ideally the distribution of types of service between users involved in research, practice and teaching should have been balanced. However because of the large number of parameter combinations and the fact that the full sample of users had not been recruited before the first issues were distributed, this was not wholly possible (see section 3.0). In any case this would have been no guarantee that the distribution by nature or work of the respondents to the questionnaire would be balanced.

The breakdown of service parameters by nature of work (P, practice; T, teaching; R, research) of respondents is as follows:

TABLE 7

SERVICE PARAMETERS BY NATURE OF WORK

Nature of work	Coverage			Entry format			Frequency			Index		Total
	P	Q	R	A	K	C	'	3	9	No	Yes	
P	17	13	13	13	12	18	12	14	17	23	20	43
TR	12	10	8	16	9	5	4	18	8	15	15	30
R	4	4	11	7	7	5	4	11	4	9	10	19
PR	9	1	7	5	5	7	8	3	6	8	9	17
PTR	4	2	4	5	2	3	4	1	5	5	5	10
T	3		2		4	1	4		1	3	2	5
PT	1	2	2	1	1	3	1	2	2	2	3	5
TOTAL	50	32	47	47	40	42	37	49	43	65	64	129
P+	31	18	26	24	20	31	25	20	30	38	37	75
T+	20	14	16	22	16	12	13	21	16	25	25	50
R+	29	17	30	33	23	20	20	33	23	37	39	76

The lower table is the breakdown over all individuals involved in practice (P+), all those involved in teaching (T+) and all those involved in research (R+). The balance for services with and without index is very good for specific combinations as well as for the accumulated split between practice, teaching and research. The balance for the different levels of coverage is fairly good, at least for the accumulated split. For the different frequencies and entry formats the balance is not so good. More researchers and fewer practitioners received the 3-weekly service than the other frequencies. More researchers received services with abstracts, and more practitioners received services with titles only than other entry formats. However, the imbalance as tested by the usual contingency table test on the lower tables is not significant at the 10% level.

4.3 User satisfaction broken down by other factors

Responses to Question 13a asking users to rate the service were:

(1)	of no use	4	3.2%
(2)	of little use	40	31.5%
(3)	moderately useful	66	52.0%
(4)	very useful	17	13.4%

The response to this question will be called user satisfaction. Two respondents did not answer this question and will be ignored in this section. They both gave overwork and lack of time as their reason for not participating fully in the experiment.

TABLE 8

USER SATISFACTION BY SERVICE PARAMETERS SINGLY

		satisfaction:							
		1	2	3	4	1	2	3	4
coverage	P	1	14	27	6	2.1%	29.1%	56.3%	12.5%
	Q	0	9	16	7		28.1%	50.0%	21.9%
	R	3	17	23	4	6.4%	36.2%	48.9%	8.5%
entry format	A	2	14	25	5	4.3%	30.3%	54.4%	10.8%
	K	1	14	20	4	2.6%	35.9%	51.2%	10.3%
	C	1	12	21	8	2.4%	28.6%	50.0%	19.0%
frequency	1	1	12	19	5	2.7%	32.4%	51.3%	13.5%
	3	2	15	24	7	4.2%	31.2%	50.0%	14.6%
	9	1	13	23	5	2.4%	30.9%	54.8%	11.8%
index	N	1	20	32	12	1.5%	30.8%	49.2%	18.5%
	Y	3	20	34	5	4.8%	32.8%	54.9%	8.1%

It is clear that the distribution of satisfaction is independent of the service frequency. Tests for differences in the row means of the other tables (using 1-way analysis of variance on the 3 row tables) revealed that the row means for the different coverages and those for the service with and without index are significantly different at the 10% level but not at 5%. The row means of the entry format table are not signficantly different. Treating the tables as contingency tables (omitting the first column) no significant differences were found between the rows.

Points of interest in the tables, bearing in mind that the differences are not very signficant, are:

(i) Coverage Q (core material) was more often very useful and coverage R (urban planning) generally less useful than coverage P. However, not all recipients of coverage R were specifically urban planners, so the latter might be expected.

(ii) The services without an index were more often very useful than those with one, as were the services with titles only.

Since these indications are slightly surprising, it is worth looking at the breakdown of user satisfaction in more detail.

TABLE 9

USER SATISFACTION BY SERVICE PARAMETER COMBINATIONS

PA1Y	3, 3, 3			RA1Y	2, 2, 1
PA1N	2, 3, 4			RA1N	2, 4, 2
PA3Y	4, 3, 3, 3	QA3Y	2, 3	RA3Y	2, 3, 2
PA3N	2, 3, 2, 4	QA3N	2, 3	RA3N	3, 1, 3
PA9Y	2, 9•	QA9Y	3, 3, 3	RA9Y	3, 2, 3
PA9N	3, 3, 2	QA9N	3, 3	RA9N	3, 4, 3, 3
PK1Y	3, 2, 2			RK1Y	3, 3, 3
PK1N	4, 3			RK1N	3, 4, 3
PK3Y	3, 9•	QK3Y	2, 2, 2, 4	RK3Y	1, 3, 2
PK3N	3, 3	QK3N	3, 3, 3	PK3N	4, 3
PK9Y	3, 2	QK9Y	3, 2	RK9Y	3
PK9N	2, 3	QK9N	2, 3	RK9N	2, 2, 2, 2
PC1Y	4, 3, 3			RC1Y	2, 2, 3, 3
PC1N	3, 3, 2, 2			RC1N	3, 3, 2
PC3Y	3, 3, 3, 3	QC3Y	2, 3	RC3Y	
PC3N	3, 2, 4	QC3N	2, 4, 4	RC3N	2, 3, 2
PC9Y	1, 2, 2	QC9Y	4, 3, 3, 4	RC9Y	3
PC9N	3	QC9N	4, 4, 3	RC9N	3

•9 indicates no reply.

One hypothesis that is suggested by this table is that the sheer volume of the material in the P9 and R9 services is inhibiting in a service intended for personal use rather than for reference in a library.

TABLE 10

USER SATISFACTION BY NATURE OF WORK

Nature of work		User satisfaction 1	2	3	4	1	2	3	4
P	(43)	2	17	22	2	4.7%	39.5%	51.2%	4.7%
TR	(29)	2	5	13	9	6.9%	17.2%	44.9%	31.0%
R	(19)		8	10	1		42.1%	52.6%	5.3%
PR	(16)		6	8	2		37.5%	50.0%	12.5%
PTR	(10)		2	6	2		20.0%	60.0%	20.0%
T	(5)		1	3	1		20.0%	60.0%	20.0%
PT	(5)		1	4			20.0%	80.0%	
overall	(127)	4	40	66	17	3.2%	31.5%	52.0%	13.4%
P+	(71)	2	26	40	6	2.7%	35.1%	54.1%	8.1%
T+	(49)	2	9	26	12	4.1%	18.4%	53.0%	24.5%
R+	(71)	2	21	37	11	2.7%	28.4%	50.0%	18.9%

An analysis of variance on this lower table is not strictly applicable since the three rows are not independent. But the fact that some respondents appear in more than one row would tend to make the row means closer than otherwise. The analysis of variance calculations suggests that these row means are significantly different at the 10% level, but not at the 5% level. Considering only the two largest categories, the difference between the P (practice only) and TR (teaching and research rows in the upper table is significant at the 5% level.

It is obvious from the table that the group of people doing teaching and research was on the whole more satisfied with the service than those only involved in practice. Those involved only in research seemed less satisfied than those also teaching, perhaps because they keep up with primary material and find the time-lag too great, or because they have better library facilities. Many of the teachers were from polytechnics or colleges of art, which often have small libraries.

Considering only the two largest groups, (P and TR) the breakdowns by service parameters are as follows:

TABLE 11

USER SATISFACTION BY SERVICE PARAMETERS FOR THOSE INVOLVED ONLY IN PRACTICE

Service code		User satisfaction 1	2	3	4	1	2	3	4
Overall	(43)	2	17	22	2	4.7%	39.5%	51.2%	4.7%
P---	(17)	1	7	9		5.9%	41.2%	52.9%	
Q---	(13)		4	7	2		30.8%	53.8%	15.4%
R---	(13)	1	6	6		7.7%	46.2%	46.2%	
-A--	(13)		5	8			38.5%	61.5%	
-K--	(12)	1	5	6		8.3%	41.7%	50.0%	
-C--	(18)	1	7	8	2	5.6%	38.9%	44.4%	11.1%
--1-	(12)		5	7			41.7%	58.3%	
--3-	(14)	1	6	7		7.1%	42.9%	50.0%	
--9	(17)	1	6	8	2	5.9%	35.3%	47.1%	11.8%
---N	(23)		10	11	2		43.5%	47.8%	8.7%
---Y	(20)	2	7	11		10.0%	35.0%	55.0%	

TABLE 12

USER SATISFACTION BY SERVICE PARAMETERS FOR THOSE DOING RESEARCH AND TEACHING

Service code		User satisfaction 1	2	3	4	1	2	3	4
Overall	(29)	2	5	13	9	6.9%	17.2%	44.8%	31.0%
P---	(11)		1	7	3		9.1%	63.6%	27.2%
Q---	(10)		2	4	4		20.0%	40.0%	40.0%
R---	(8)	2	2	2	2	25.0%	25.0%	25.0%	25.0%
-A--	(15)	2	3	7	3	13.3%	20.0%	46.7%	20.0%
-K--	(9)		1	5	3		11.1%	55.6%	33.3%
-C--	(5)		1	1	3		20.0%	20.0%	60.0%
--1-	(4)	1	1	1	1	25.0%	25.0%	25.0%	25.0%
--3-	(18)	1	3	8	6	5.6%	16.7%	44.4%	33.3%
--9-	(7)		1	4	2		14.3%	57.2%	28.6%
---N	(15)	1	1	7	6	6.7%	6.7%	46.7%	40.0%
---Y	(14)	1	4	6	3	7.1%	28.5%	42.8%	21.4%

From these two tables it would appear that the fact that practitioners found the service less useful than those doing teaching and research is reasonably independent of all the service parameters that were varied, or at least of the particular variations used. One possible reason for this is that articles and books on planning tend to be rather academic, and practising planners require material with more down-to-earth ideas and experience. Perhaps a much more selective service with one or two issues a year and confined to material on actual projects or experiments would suit them better. The two practitioners who regarded the service as very useful both received the same service (QC9N) with the core material in the most compact form.

TABLE 13

USER SATISFACTION BY USE OF INFORMATION SERVICES

	Satisfaction							
	1	2	3	4	1	2	3	4
Use Geo Abstracts		5	18	6		17.3%	62.0%	20.7%
Do not use Geo Abstracts	4	35	48	11	4.1%	35.7%	49.0%	11.2%
Use other information service	2	24	28	8	3.2%	38.7%	45.2%	12.9%
Do not use other service	2	16	38	9	3.1%	24.6%	58.5%	13.8%
Overall	4	40	66	17	3.2%	31.5%	52.0%	13.4%

From these figures it appears that participants who already used Geo Abstracts found the service more useful than participants who did not. These two responses can be combined as follows:

	Satisfaction							
	1	2	3	4	1	2	3	4
Use any information service	2	25	36	11	2.7%	33.9%	48.7%	14.9%
Do not use any service	2	15	30	6	3.8%	28.3%	56.5%	11.3%

This indicates that there is no straightforward 'novelty' effect and people who previously used no information service were not generally more, or less, satisfied than those who did.

4.4 Tear-off sheet responses

Attached to each issue of the experimental service was a tear-off sheet on which participants were asked to note items of interest and how these items were followed up. A specimen sheet is given in Appendix E. Participants were asked to keep these sheets and return

them with the questionnaire at the end of the experimental period. Of the 129 respondents to the questionnaire 102 returned sheets which were at least partially completed. Twenty-seven either did not return sheets or returned blank ones. Among these were some who regarded the service as very useful; so non-completion of the sheets does not imply that no items were of interest. Three participants returned sheets but no questionnaire. There was immense variation in the use made of the sheets. Some people noted a large number of items of interest, but either did not follow any of them up or, if they did, did not complete the rest of the sheet. Others marked very few items and followed them up thoroughly. The largest number of items noted by an individual was 130, which was 16% of the number of items in the service he received; of these, he followed up 39.

A summary of the responses on the sheets broken down by the service parameters is given in Tables 14 to 17. Because of the enormous variance in individual responses, no great reliance can be placed on these figures. However, a few tentative points can be made. The percentage of items followed up which proved useful did not increase with the amount of detail in the entries, but the proportion of items noted that were followed up was slightly higher for services with abstracts. This is consistent with the general preference for abstracts over other forms of entry in the questionnaire replies (section 4.1). Most participants receiving services with titles and keywords said that they would not be satisfied with titles alone. They clearly felt that keywords helped them select the most relevant items. However, although they noted and followed up fewer items than people receiving titles only, the proportion of items followed up which proved useful was in fact lower. This puzzling result may just be a further indication that none of these figures are reliable. Despite the fact that the number of entries in the 1-weekly, 3-weekly and 9-weekly services was roughly in the ratio 1:2:3 the numbers of items noted and followed up are of the same order for the different frequencies. The 9-weekly service in fact gave rise to fewer noted items and fewer follow-ups, although it covered more material, including all that covered by the other services; this is not altogether surprising in view of the comments in the questionnaire that the 9-weekly service contained too many items to scan. Useful items from coverage Q were

(cont. on p.45)

TABLE 14

TEAR-OFF SHEET RESPONSES BY COVERAGE

	P		Q		R		Overall	
	N	%	N	%	N	%	N	%
Sets of sheets used	36		30		39		105	
Items noted	1175		609		909		2693	
Average items noted	32.6		20.3		23.3		25.6	
Items followed up	462		311		503		1276	
Average items followed up	12.8		10.4		12.9		12.2	
% followed up[1]		39.3		51.1		55.3		47.4
Where followed up:								
Own library[2]	324	70.1	180	57.9	284	56.5	788	61.8
Public library[2]	23	5.0	40	12.9	55	10.9	118	9.2
Other[2]	114	24.7	91	29.3	165	32.8	370	29.0
Useful[2]	321	69.5	213	68.5	330	65.6	864	67.7
Not useful[2]	40	8.7	48	15.4	62	12.3	150	11.8
Could not obtain[2]	68	14.7	17	5.5	69	13.7	154	12.1
Search not complete[2]	33	7.1	33	10.6	42	8.3	108	8.5
Items useful for:								
Teaching[3]	69	21.5	25	11.7	49	14.8	143	16.6
Research[3]	98	30.5	26	12.2	115	34.8	239	27.7
Practice[3]	86	26.8	80	37.6	54	19.7	211	24.4
General knowledge[3]	154	48.0	126	48.0	186	56.4	466	53.9

Notes (a) Totals of which percentages are taken are indicated by superscripts as follows:

1 - items noted
2 - items followed up
3 - items useful

(b) Items marked as followed up but with no further annotation have been classed as 'search not complete'.

TABLE 15

TEAR-OFF SHEET RESPONSES BY ENTRY FORMAT

	Abstract		Keywords		Citation		Overall	
	N	%	N	%	N	%	N	%
Sets of sheets used	36		30		39		105	
Items noted	982		667		1044		2693	
Average items noted	27.3		22.2		26.8		25.6	
Items followed up	540		295		441		1276	
Average items followed up	15.0		9.8		11.3		12.2	
% followed up[1]		55.0		44.2		42.2		47.4
Where followed up:								
Own library[2]	306	56.7	158	53.6	324	73.5	788	61.8
Public library[2]	40	7.4	48	16.3	30	6.8	118	9.2
Other[2]	195	36.1	89	30.2	86	19.5	370	29.0
Useful[2]	351	65.0	194	65.8	319	72.3	864	67.7
Not useful[2]	59	10.9	46	15.6	45	10.2	150	11.8
Could not obtain[2]	101	18.7	20	6.8	33	7.5	154	12.1
Search not complete[2]	29	5.4	35	11.9	44	10.0	108	8.5
Items useful for:								
Teaching[3]	59	16.8	36	18.6	48	15.0	143	16.6
Research[3]	122	34.8	46	23.7	71	22.3	239	27.7
Practice[3]	72	20.5	65	33.5	74	23.2	211	24.4
General knowledge[3]	198	56.4	94	48.5	174	54.6	466	53.9

Notes: (a) Totals of which percentages are taken are indicated by superscripts as follows:

1 - items noted
2 - items followed up
3 - items useful

(b) Items marked as followed up but with no further annotation have been classed as 'search not complete'.

TABLE 16

TEAR-OFF SHEET RESPONSES BY FREQUENCY

	1-weekly		3-weekly		9-weekly		Overall	
	N	%	N	%	N	%	N	%
Sets of sheets used	30		44		31		105	
Items noted	765		1288		640		2693	
Average items noted	25.5		29.3		20.6		25.6	
Items followed up	412		547		317		1276	
Average items followed up	13.7		12.4		10.2		12.2	
% followed up[1]		53.8		42.5		49.6		47.4
Where followed up:								
Own library[2]	276	67.0	340	62.2	172	54.3	788	61.8
Public library[2]	23	5.6	42	7.7	53	16.7	118	9.2
Other[2]	114	27.7	163	29.8	93	29.3	370	29.0
Useful[2]	318	77.2	343	62.7	203	64.0	864	67.7
Not useful[2]	43	10.4	78	14.3	29	9.1	150	11.8
Could not obtain[2]	38	9.2	73	13.3	43	13.6	154	12.1
Search not complete[2]	13	3.2	53	9.7	42	13.2	108	8.5
Items useful for:								
Teaching[3]	55	17.3	63	18.4	25	12.3	143	16.6
Research[3]	87	27.4	107	31.2	45	22.2	239	27.7
Practice[3]	61	19.2	82	23.9	68	33.5	211	24.4
General knowledge[3]	194	61.0	183	53.4	89	43.8	466	53.9

Notes: (a) Totals of which percentages are taken are indicated by superscripts as follows:

1 - items noted
2 - items followed up
3 - items useful

(b) Items marked as followed up but with no further annotation have been classed as 'search not complete'.

TABLE 17

TEAR-OFF SHEET RESPONSES BY INDEX

	Index		No Index		Overall	
	N	%	N	%	N	%
Sets of sheets used	51		54		105	
Items noted	1467		1226		2693	
Average items noted	28.8		22.7		25.6	
Items followed up	667		609		1276	
Average items followed up	13.1		11.3		12.2	
% followed up[1]		45.5		49.7		47.4
Where followed up:						
Own library[2]	382	57.3	406	66.7	788	61.8
Public library[2]	57	8.5	61	10.0	118	9.2
Other[2]	225	33.7	145	23.8	370	29.0
Useful[2]	460	69.0	404	66.3	864	67.7
Not useful[2]	78	11.7	72	11.8	150	11.8
Could not obtain[2]	77	11.5	77	12.6	154	12.1
Search not complete[2]	52	7.8	56	9.2	108	8.5
Items useful for:						
Teaching[3]	81	17.6	62	15.3	143	16.6
Research[3]	133	28.9	106	26.2	239	27.7
Practice[3]	140	30.4	71	17.6	211	24.4
General knowledge[3]	243	52.8	223	55.2	466	53.9

Notes: (a) Totals of which percentages are taken are indicated by superscripts as follows:
1 - items noted
2 - items followed up
3 - items useful

(b) Items marked as followed up but with no further annotatiom have been classed as 'search not complete'.

TABLE 18

RELATIONSIP OF NUMBER OF ITEMS NOTED TO

NUMBER OF ITEMS COVERED

	Coverage					
	P		Q		R	
Frequency						
	14	441			16	374
1 - weekly	325	23.3	-		440	27.5
	.053				.074	
	15	798	17	348	12	678
3 - weekly	622	41.5	362	21.3	304	25.3
	.052		.061		.037	
	7	1239	13	540	11	1054
9 - weekly	228	32.5	247	19.0	165	15.0
	.026		.035		.014	

Note Figures in each cell are arranged as follows:

a - no. of sets of sheets used
b - no. of items noted
c - no. of items covered by service
d - ave. no. of items noted
e - ave. no. of items noted/no. of items covered

TABLE 19

RELATIONSHIP OF NUMBER OF ITEMS FOLLOWED UP

TO NUMBER OF ITEMS COVERED

Frequency	Coverage P		Q		R	
	14	441			16	374
1 - weekly	154	11.0	-		258	16.1
	.024				.043	
	15	798	17	348	12	678
3 - weekly	233	15.5	171	10.1	143	11.9
	.019		.029		.018	
	7	1239	13	540	11	1054
9 - weekly	75	10.7	140	10.8	102	9.3
	.009		.020		.009	

Note Figures in each cell are arranged as follows:

a - no. of sets of sheets used
b - no. of items followed up
c - no. of items covered by service
d - ave. no. of items followed up
e - ave. no. of items followed up/no. of items covered

less likely to be useful for research, while those from services with abstracts were more likely to be useful for research.

Tables 18 and 19 show the relationship between the numbers of items noted and followed up to the numbers of items covered by the different services. For all three coverage types the proportion of material noted and the proportion followed up increase with frequency of issues. As would be expected, the proportion of material noted and followed up is higher for coverage Q (core materials) than for the other coverage patterns.

4.5 Relationship of tear-off sheets responses to user satisfaction

It might be hoped that the information recorded on the sheets would be correlated in some way with the participants' reactions to the usefulness of the service. Unfortunately, this hardly appears to be the case.

TABLE 20

TEAR-OFF SHEET RESPONSES BY LEVEL OF SATISFACTION

	No use	Little use	Moderately useful	Very useful
% of sheets used	50.0	82.5	80.3	76.5
No. of sheets used	2	33	53	13
Ave. items noted	6.8	26.1	28.0	28.2
Ave. items followed up	3.5	12.3	13.8	8.4
Ave. items useful	2.5	7.4	9.3	6.2
% items followed up (of those noted)	51.5	47.1	49.3	28.8
% items useful (of those followed up)	71.4	60.2	67.4	73.8

The only one of these statistics which seems to reinforce the satisfaction with the service is the percentage of those items followed up which were useful. The first column can reasonably be ignored

because it includes only two individuals. Broken down by frequency of service and by coverage, this statistic is as follows:

TABLE 21

PERCENTAGE OF ITEMS FOLLOWED UP WHICH WERE USEFUL, BY FREQUENCY AND COVERAGE AND BY SATISFACTION LEVEL

	Little use	Moderately useful	Very useful
1-weekly	71.9	84.7	69.2
3-weekly	49.7	65.8	76.1
9-weekly	56.6	57.1	81.8
P	54.8	69.7	78.2
Q	57.0	60.1	47.1
R	69.5	69.9	61.8

Although on the whole the percentage of items followed up that were useful increases with satisfaction level, it is obviously not a reliable predictor. Nor is satisfaction a good indicator of use. What is most surprising is that a lower percentage of items noted was followed up by recipients of the 3-weekly services than the other frequencies, despite the fact that this frequency was preferred. The percentage of items followed up that were useful was also lowest for the 3-weekly service.

There are few other real conflicts between the two evaluation methods, (the questionnaire, and use as recorded on tear-off sheets) but nor is there much agreement. The general satisfaction level may be a better guide to the potential market, and the specific use a better guide to real value, but, as pointed out, the variation in individual recording on the tear-off sheets makes it unsafe to draw any such conclusions in this particular case.

4.6 The choice between wide coverage with no abstracts and limited coverage with good abstracts

This choice is clearly a difficult one. Seventeen respondents did not reply and many of these commented on the difficulty of the decision. One problem is the definition of 'good' when applied to abstracts. Responses to this question broken down by nature of work are given below.

		W[1]	L[1]	No reply	W[1] %	L[1] %
Overall		54	57	17	48.6	51.4
P	(43)	14	21	8	40.0	60.0
TR	(30)	15	11	4	57.6	42.3
R	(19)	12	7		63.2	36.8
PR	(17)	6	8	3	42.9	58.1
PTR	(10)	4	4	2	50.0	50.0
T	(5)	1	4		20.0	80.0
PT	(5)	3	2		60.0	40.0
P+	(75)	27	35	13	43.6	56.4
T+	(50)	23	21	6	52.2	47.8
R+	(76)	37	30	9	55.2	44.8

(percentages do not include non-replies)

Considering the P, R and TR rows, it appears that practitioners favour good abstracts and limited coverage while researchers prefer wide coverage. However the difference between the P and TR rows is not significant at the 10% level using the 2 x 2 contingency table test suggested by Cox (1970, p.35) or the usual contingency table test.

---

[1] W indicates the choice of wide coverage with no abstracts; L indicates the choice of limited coverage with good abstracts.

Broken down by service parameters, the responses are as follows:

		W	L	No reply	W	L
Coverage	P (50)	20	23	7	46.5%	53.5%
	Q (32)	18	12	2	60.0%	40.0%
	R (47)	17	22	8	43.5%	56.5%
Entry format	A (47)	18	22	7	45.0%	55.0%
	K (40)	21	15	4	58.4%	41.6%
	C (42)	16	20	6	44.4%	55.6%
Frequency	1 (37)	15	15	7	50.0%	50.0%
	3 (49)	22	21	6	51.2%	48.8%
	9 (43)	18	21	4	46.2%	53.8%
Index	N (65)	23	33	9	41.1%	58.9%
	Y (64)	32	24	8	57.2%	42.8%

(percentages do not include non-replies)

The differences in the proportions choosing wide coverage with no abstracts (ignoring non-replies) for the different service parameters are only significant for the index parameter. This difference is significant at the 10% level using either the usual contingency table test or the 2 x 2 contingency table test suggested by Cox (1970). Respondents who received no index tended to prefer limited coverage with good abstracts, while those with an index chose wide coverage. This result has no immediate and obvious explanation. There is no bias in the distribution of services with index towards researchers rather than practitioners (see section 4.2). Such a bias would have been a possible explanation. One possibility is that respondents who received no index answered this question assuming that no index would be available, and therefore chose increased detail on a limited amount of material, as being more suitable for a publication which has to be scanned rather than referred to through an index.

Although the difference in proportions for the coverage parameters is not significant there is a slight indication that recipients of the core coverage favour wide coverage. This contrasts slightly with the responses to question 12 of the questionnaire (see section 4.1), where

fewer recipients of core coverage Q than of coverage P wanted more journals and books to be covered.

Considering the figures for the different entry formats, it appears that users who received keywords favoured wide coverage with no abstracts. However, it is likely that these people interpreted 'with no abstracts' as implying 'but with keywords'.

In conclusion, the choice between wide coverage with no abstracts and limited coverage with good abstracts was difficult, and did not appear to be greatly affected by variation in the service parameters, except that an index seemed to make a user more likely to favour wide coverage. The nature of work in which a user is involved seems to be more important, with researchers preferring wide coverage and practitioners good abstracts. However this effect is not very strong.

STATISTICAL ANALYSIS II

5.0 ANALYSIS FOR LINEAR DISCRIMINANTS AND PRINCIPAL COMPONENTS

It would be useful to know how well recipients' satisfaction with the service could be predicted by other factors. To this end it was decided to use linear discriminant analysis to obtain functions of other variables which can be used to predict the satisfaction level of the respondents. For technical descriptions of linear discriminant analysis see Anderson (1958), section 6.7, or Kendall (1966), chapter 44. It must be borne in mind that this technique was developed for normal variables and can only be considered optimal, even in such a case, when further assumptions are made. With discrete variables the technique can only be used to obtain discriminant functions which should be reasonably good. They can be judged by the results they give when applied to the questionnaire data. Ideally the functions should be tested on different data from that used to generate the functions, but because of the number of service parameter combinations our sample is not large enough to divide for this purpose.

5.1 Selection of satisfaction groups and variables for linear discriminant analysis

Since only four respondents described the service as of no use to them, these were included with those who considered it of little use. Respondents were therefore allocated respectively to group 1, 2 or 3 according to whether they found the service of little or no use, moderately useful or very useful.

The variables chosen as relevant to this analysis were:

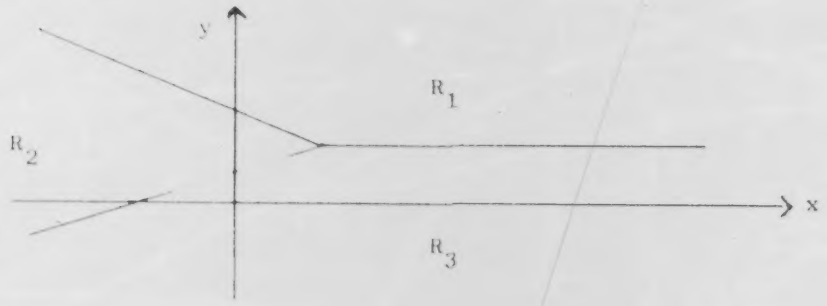
(i) Coverage (P, Q, R)
(ii) Entry format (A, K, C)
(iii) Frequency (1-, 3-, 9- weekly)
(iv) Index (Y, N)
(v) Nature of work (P, T, R)
(vi) Whether or not an information service is normally used
(vii) Attitude to frequency of issues (too frequent, about right, not frequent enough)
(viii) Attitude to entry format (not adequate, sometimes adequate, completely adequate)
(ix) Attitude to number of items per issue (too few, about right, too many)
(x) Attitude to coverage (more/fewer journals, more/fewer books, more/fewer reports etc.)
(xi) Choice between wide coverage with no abstracts and limited coverage with good abstracts.

Since the questions on attitude to an index were not comparable between respondents with and without indexes, they could not be used. Variable (xi) was included to detect whether this choice was related to satisfaction level.

5.2 Representation of data for linear discriminant analysis

Certain problems arise when using discrete data for this type of analysis. Given observations (as measured by m variables) which fall into k groups (in this case the groups are defined by the satisfaction level), linear discriminant analysis generates k linear

functions of the m variables which divide the variable space into k non-overlapping regions. Any observation on these variables can be considered as a point in this space and is predicted to be in the group associated with the region R in which it is situated. As an illustration consider the case of three groups of observations on two variables.



Because the boundaries between the regions are linear it is clearly undesirable to assign numerical values to coded variables in such a way that high and low values are liable to be associated with low satisfaction level, and middle values with high satisfaction level. This affects our representation of variables (i), (ii), (iii), (v), (vii), (ix), and (x). One possible approach would be to treat each possible code for these variables as a 0-1 variable. This would also obviate the possible need for scaling the numerical values assigned to codes, since the relative scaling of different dimensions in the variable space is immaterial for linear discriminant analysis. However, this approach generates another problem. In the case where one and only one of such a set of variables would have the value one, the sum of the values for this set of variables would always be one. This is a linear dependency among the variables, and the existence of such a dependency means that no unique set of discriminant functions can be found by linear discriminant analysis. Setting aside this case for the moment, the following variables can be treated as 0-1 variables:

(iv) Index

(v) Nature of work - 3 variables (P, T, R)

(vi) Whether or not an information service is normally used

(x) Attitude to coverage - 4 variables (more journals, more books, more reports etc., less of anything)

(xi) Choice between wide coverage with no abstracts and limited coverage with good abstracts.

Variable (viii), the attitude to entry format, can clearly be ordered suitably - not adequate, sometimes adequate, completely adequate. With only three values, and hence only two differences to select, scaling is not as important as it would be with more values. With no indications that the differences should be different, the three possibilities were given values 1, 2 and 3.

Returning to the cases where one and only one of a set of codes is selected, one possibility is to include a 0-1 variable for all but one of these codes. As an example for coverage, one 0-1 variable for P and another for Q could be used. An observation with 0 for both of these variables would correspond by implication to coverage R. This approach was tried with the relevant variables as follows:

(i) Coverage - 2 variables (P, Q)
(ii) Entry format - 2 variables (A, K)
(iii) Frequency - 2 variables (1, 3)
(vii) Attitude to frequency - 2 variables (too frequent, not frequent enough)
(ix) Attitude to number of items per issue - 2 variables (too few, too many)

Results from this first analysis with 22 variables in all are discussed in section 5.3. Because of the lack of symmetry of treatment of variables (i), (ii) and (iii), it proved difficult to interpret the results and a second approach was tried. Subsidiary discriminant analyses using only variables (i) - (v) were performed, with variables (i) coverage, (ii) entry format, and (iii) frequency each represented by one variable, giving the values 1, 2 and 3 to the three possible codes. All possible orderings and combinations of the three variables were tried, and the results are given in section 5.4. From these, the orderings which gave the best discrimination were chosen and used in further analyses with the following variables:

TABLE 22

VARIABLES USED IN PRINCIPAL COMPONENT ANALYSIS AND SUBSEQUENT DISCRIMINANT ANALYSIS

(1) Coverage - R = 1, P = 2, Q = 3
(2) Entry format - A = 1, K = 2, C = 3
(3) Frequency - 1-weekly = 1, 9-weekly = 2, 3-weekly = 3
(4) Index - N = 0, Y = 1
(5) Practice = 1
(6) Teaching = 1) nature of work
(7) Research = 1
(8) Normally uses information service = 1
(9) Issues too frequent = 1
(10) Issues not frequent enough = 1
(11) Entry format not adequate = 1, sometimes adequate = 2, completely adequate = 3
(12) Too few items per issue = 1
(13) Too many items per issue = 1
(14) More journals = 1
(15) More books = 1
(16) More reports, etc. = 1
(17) Less of anything = 1

The original variable (xi) was omitted as it did not appear from the earlier analyses to be related to the satisfaction level. The results are discussed in section 5.6. In all cases, individuals who had not answered one or more of the relevant questions were ignored.

5.3 First discriminant analysis

As described in section 5.2 the first discriminant analysis was performed using 22 variables. The number of respondents who had answered all the relevant questions was 103. Three discriminant functions are produced, one for each satisfaction group, such that each observation is allocated to the group for which the value of the discriminant function is greatest. The coefficients of the functions for this analysis were:

TABLE 23

DISCRIMINANT FUNCTIONS FROM FIRST ANALYSIS

Satisfaction group	1	2	3
Constant term	-23.27	-21.27	-28.16
P-coverage	3.90	4.47	3.68
Q-coverage	9.08	9.33	11.89
A-entries	0.48	0.32	- 1.12
K-entries	4.60	3.77	2.22
1-weekly	7.68	7.55	10.18
3-weekly	5.60	5.34	5.31
Index	2.54	2.45	1.22
Practice	9.42	9.09	10.06
Teaching	4.30	4.35	6.85
Research	5.12	4.83	6.07
Uses information service	3.21	3.44	3.54
Too frequent	- 2.22	- 1.56	- 1.25
Not frequent enough	2.12	1.36	3.60
Adequacy of entry format	7.20	6.90	7.87
Too few items	- 1.69	- 2.96	- 4.82
Too many items	4.64	3.67	4.84
More journals	4.57	3.96	6.92
More books	- 0.71	- 0.43	- 0.66
More reports etc.	3.85	4.05	3.45
Less of anything	1.53	1.08	2.01
Wide coverage and limited abstracts/limited coverage and no abstracts	4.79	4.22	4.34

These functions allocated the observations to groups as follows:

Actual group	Predicted group			
	1	2	3	Total
1	19	11	4	34
2	18	32	8	58
3	1		10	11
Total	38	43	22	103

Of the individuals 59.2% are assigned to their correct satisfaction group. This is not in itself a good measure for comparison of discriminant functions, since 56.3% would be correctly assigned if all individuals were assigned to group 2. The fact that very few individuals assigned to group 3 in fact belong to group 1 and vice versa is of value in this case. Of those predicted to find the service of little or no use, only one found it very useful, and none of those predicted to find it moderately useful found it very useful.

It is not easy to interpret the discriminant functions. Large differences in the coefficients of a variable between the three functions clearly imply that that variable is a good discriminator. But one problem is that the variables used are not independent, and more important are correlated in the data used. For example the variable indicating that an individual is involved in planning practice is quite highly negatively correlated with the variables indicating involvement in research and teaching. This makes consideration of the difference in coefficients of these variables for the three functions confusing. It is almost essential to consider them together. For instance an individual who is involved only in practice, and another who is involved in both teaching and research but not in practice contribute almost the same value to the first two discriminant functions but the latter contributes considerably to the third discriminant function. Thus someone involved in teaching and research is more likely to be satisfied with the service. However, the constant term for the third function is more than 3 less than the other two constants. What does this mean? Some of these problems of interpretation might be avoided if uncorrelated variables could be used. One way of obtaining uncorrelated variables is to perform a principal component analysis and then use linear discriminant analysis on some or all of the principal components. For a technical description of principal component analysis see Kendall (1966) chapter 43. Results of these analyses are given in sections 5.5 and 5.6. Interpretation of the relation of the size of a coefficient to the constant term in a function is also tricky. The arbitrary omission of one of a set of codes has constrained the coefficients of the corresponding variable to be the same, and zero. The effect of this is not clear, and to try to avoid this constraint, subsidiary analyses on a reduced set of variables were performed.

5.4 Subsidiary discriminant analyses

The variables in consideration fall into two types: state variables recording facts, and variables describing attitudes. Whether or not an individual usually uses an information service falls between the two types but for this purpose has been classed as an attitude variable. Subsidiary analyses were made using the two classes of variables separately, and with all possible orderings of the values for the service parameters for the class of state variables recording facts.

TABLE 24

DISCRIMINANT FUNCTIONS ON ATTITUDE VARIABLES

Satisfaction group	1	2	3
Constant term	- 7.29	- 6.14	- 8.59
Uses information service	2.27	2.25	1.70
Too frequent	0.77	0.84	1.24
Not frequent enough	2.00	1.17	2.81
Adequacy of entry format	4.61	4.49	4.99
Too few items/issue	0.98	0.23	- 0.35
Too many items/issue	2.70	1.96	1.95
More journals	2.72	2.17	4.55
Less of anything	2.37	1.41	1.69

Actual group	Predicted group			
	1	2	3	Total
1	17	13	11	41
2	18	32	14	64
3	1	2	10	13
Total	36	47	35	118

Comparing this allocation with that in the previous section indicates that the attitude variables give rise to slightly worse discriminants than the whole set of variables.

Considering state variables only, the following orderings gave the allocations which looked most reasonable:

RPQ/ACK/193

	Predicted group			
Actual group	1	2	3	Total
1	28	10	6	44
2	30	18	18	66
3	1	4	12	17
Total	59	32	36	127

RPQ/CAK/193

	Predicted group			
Actual group	1	2	3	Total
1	28	10	6	44
2	29	18	19	66
3		4	13	17
Total	57	32	38	127

RPQ/AKC/193

	Predicted group			
Actual group	1	2	3	Total
1	28	10	6	44
2	32	15	19	66
3		3	14	17
Total	60	28	39	127

RPQ/AKC/913

	Predicted group			
Actual group	1	2	3	Total
1	30	8	6	44
2	31	16	19	66
3	1	4	12	17
Total	62	28	37	127

It is impossible to choose one of these as best without stipulating a criterion that can be measured. The simple criterion, percentage of individuals correctly assigned, has values 45.7%, 46.5%, 44.9% and 45.7%. If in addition the individuals assigned to a group next to the correct one are added in with weight of a half, the values become 70.1, 70.2, 70.0, 70.0 respectively. This is still an unsatisfactory measure because, with only three groups, a high value could be attained simply by assigning all individuals to group 2. However it is obvious that there is no clear reason for preferring one of these four orderings. Arbitrarily the ordering RPQ/AKC/193 was chosen for subsequent analyses (see sections 5.5 and 5.6). The coefficients of the discriminants in this analysis were as follows:

TABLE 25

DISCRIMINANT FUNCTIONS ON STATE VARIABLES

Satisfaction group	1	2	3
Constant term	-16.05	-16.61	-17.95
RPQ	1.37	1.63	2.25
AKC	2.79	2.84	3.42
193	3.56	3.45	3.18
Index	5.68	5.57	4.44
Practice	7.30	7.43	6.95
Teaching	2.59	3.28	4.42
Research	5.62	5.74	6.69

In general the discriminants generated from the state variables were less good than those generated from the attitude variables.

5.5 Principal component analysis

Principal component analysis produces from an observation matrix a matrix of correlations for the original variables. Linear combinations of these variables are then obtained in turn, each one uncorrelated with all previous combinations and accounting for more of the variance than any other uncorrelated combination. These linear combinations are

known as the principal components of the correlation matrix. Usually (unless the rank of the correlation matrix is less than the number of original variables) the same number of components can be obtained as there were original variables, and the components are uncorrelated and ordered by their variance in the data. Variables with small variations in the sample data are not likely to be very useful for discrimination, (although counter-examples can easily be produced), and so it is reasonable to ignore the last few components in subsequent discriminant analyses.

The variables used in this particular analysis were the seventeen variables listed in Table 22 (section 5.2). The correlation matrix is given in Table 26, and the coefficients of the components and the percentage of the total variance accounted for by each component are given in Table 27.

The two highest correlations are negative correlations of those involved in practice with those involved in teaching and research. This corresponds to the result (section 4.1) that one third of the respondents were involved only in planning practice, and another third in research only or teaching and research. The next highest correlation is perhaps more interesting; there is a correlation of .42 between those who want coverage of more journals and those who thought that issues contained too few items. This suggests that many of the people who said that issues contained too few items did so partly because they felt that the coverage was not wide enough rather than because the issues were too small to be worth scanning. This feeling might be due to the fact that if a user is interested in the articles in a specific journal , many of which are published quarterly or less frequently, there may be several issues without any entries from this journal. In particular, for our experiment the weekly service was run for a period of nine weeks. Many quarterly journals will not have been published in this period and therefore will not appear to have been included in the coverage. This is borne out by the fact that 56.8% of those receiving the weekly services wanted more journals covered, as opposed to 46.9% of those receiving the three-weekly services and 34.9% of those receiving the nine-weekly services. This is despite the fact that there was no weekly service covering only core material. This suggests that a list of journals covered by a service would be desirable with a frequent service. The only other correlations

TABLE 5A

CORRELATION MATRIX FOR QUESTIONNAIRE DATA

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	1.00																
2	.12	1.00															
3	.32	.00	1.00														
4	.05	.05	.03	1.00													
5	.00	.17	-.21	-.03	1.00												
6	.06	-.11	.07	.01	-.45	1.00											
7	-.12	-.21	.09	.06	-.55	.33	1.00										
8	-.21	.06	-.12	-.03	-.24	-.04	.33	1.00									
9	-.09	.04	-.30	-.02	-.11	.18	-.12	-.11	1.00								
10	.16	-.11	.08	.01	-.01	-.09	.01	.12	.19	1.00							
11	-.19	-.34	-.08	.03	-.06	.07	.10	-.05	.11	-.08	1.00						
12	.05	.00	-.19	.19	-.18	.12	.20	.16	.14	.05	-.02	1.00					
13	-.08	-.28	.13	-.08	.14	-.11	-.18	-.13	-.02	.18	.02	-.20	1.00				
14	.07	.13	.07	-.04	-.28	.16	.28	.23	.07	-.04	-.03	.32	-.04	1.00			
15	-.07	.04	.09	.08	.05	-.04	.05	-.08	.05	-.03	.07	.07	.01	.06	1.00		
16	-.19	.03	.04	.15	-.08	.00	.14	.23	-.13	.02	-.13	.13	.00	.14	.07	1.00	
17	-.05	.06	.05	-.06	.15	-.21	.03	-.06	-.06	-.04	.00	-.10	.15	-.14	.03	-.03	1.00

The variables are described in Table 22 (p.53)

TABLE 27

PRINCIPAL COMPONENTS OF QUESTIONNAIRE DATA

	Component															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Variance	16%	10%	10%	9%	7%	7%	6%	6%	5%	4%	4%	3%	3%	3%	3%	2%	2%
Variable																	
1	.051	.096	.361	.420	.067	-.175	.204	-.025	.064	.187	.106	.032	-.355	.404	.238	-.314	.143
2	.058	.549	.183	.022	.016	.282	-.091	.092	.017	-.234	-.117	.343	.236	.007	-.382	-.419	.026
3	.033	-.295	.490	.188	-.209	.248	.043	.025	-.132	.178	.296	.166	-.022	-.269	-.315	.191	.395
4	-.070	.135	.085	-.011	-.534	-.391	.314	-.339	.346	-.182	.215	.048	.139	.263	-.105	.182	.047
5	.436	.252	-.083	-.177	-.037	-.124	.097	-.123	.157	.112	-.263	-.181	-.197	.229	-.089	.093	.655
6	-.326	-.163	-.034	.386	.000	.168	-.286	.164	.057	-.072	-.586	-.054	-.344	.222	-.313	.200	.047
7	-.436	-.257	.061	-.091	-.070	.173	.065	-.128	.161	-.265	-.062	-.161	.126	.032	.295	-.489	.455
8	-.283	-.049	.024	-.473	.317	.037	.042	.044	-.033	-.195	.371	.078	-.407	.349	-.335	.069	.000
9	-.070	.166	-.445	.298	.011	-.086	-.061	.502	.168	-.005	.341	.316	-.109	-.012	.183	.018	.355
10	.027	-.166	.316	-.177	.167	-.547	.233	.251	.051	-.286	-.303	.392	.144	-.121	.078	.126	.092
11	-.045	-.307	-.417	.087	-.126	-.112	.315	-.362	-.131	.222	-.077	.184	.034	.121	-.268	-.258	-.052
12	-.340	.270	-.016	-.038	-.112	-.347	.267	.066	.203	.243	-.019	-.310	-.205	-.468	-.333	-.178	-.013
13	.284	-.378	-.014	-.097	-.077	-.148	-.121	.478	.127	.159	.098	-.287	.287	.258	-.303	-.338	-.070
14	-.393	.236	.062	-.005	.072	-045	.306	.107	-.120	.356	.000	-.070	.539	.373	.018	.299	.086
15	-.017	.040	-.043	-.046	-.625	.093	.368	.303	-.412	-.347	-.032	-.101	-.153	.102	.059	.028	-.164
16	-.163	.036	.125	-.449	-.282	.040	-.374	.173	-.093	.501	-.193	.304	-.183	-.006	.254	-.124	-.038
17	.188	-.032	-.006	-.166	-.149	.387	.376	.048	.722	.070	-.155	.101	-.108	.077	.024	.194	-.063

The variables are described in Table 22 (p.53)

above .25 which indicate results not directly shown in section 4.0, are that researchers are correlated with those using information services (.33), and those who want more journals covered are positively correlated (.28) with researchers and negatively correlated (-.28) with practitioners.

It is useful, though clumsy, to try and describe the principal components in words, by selecting the largest coefficients in each component. An attempt is made below to do this for the first few components. It must be remembered that on components with high variance many individuals will be at one or other extreme of its range. Codes for the service parameters are ordered so that the last code corresponds to the highest score.

Principal components

(1) Practice, no research, does not want more journals, does not feel issues have too few items

(2) Entry format (AKC), does not feel issues have too many items

(3) Frequency (193), coverage (RPQ), does not think issues too frequent, adequacy of entry format (ve)

(4) Does not use information service, does not want more reports, coverage (RPQ), teaching

It must be stressed that, although the first component has the greatest variance in the questionnaire data, this does not imply automatically that this is the best linear combination of the original variables for predicting satisfaction with the service. Techniques have been developed for finding such a combination but, "it appears that, in general, the use of one function for discrimination among several populations may be rather Procrustean unless they are so separate that almost any method will yield reasonable results". (Kendall, 1966).

5.6 Further discriminant analyses

The principal components obtained as described in section 5.5 were then used as variables for three further linear discriminant analyses, using ten, thirteen and seventeen of the principal components. The first ten components account for 80% of the variance, the first thirteen

for 90% and the full seventeen clearly account for all the variance. The tables of predicted groups against actual groups are given below.

Using ten principal components

Actual group	Predicted group			
	1	2	3	Total
1	19	13	9	41
2	18	30	16	64
3		3	10	13
Total	37	46	35	118

Using thirteen principal components

Actual group	Predicted group			
	1	2	3	Total
1	20	15	6	41
2	16	35	13	64
3		1	12	13
Total	36	51	31	118

Using seventeen principal components

Actual group	Predicted group			
	1	2	3	Total
1	20	17	4	41
2	19	33	12	64
3		1	12	13
Total	39	51	28	118

Discrimination using only ten components is not as good as that using thirteen or seventeen. Considering these two cases, the first predicts the satisfaction of two more individuals correctly, and the second is slightly less optimistic than the first in that it predicts fewer people as being very satisfied. It may seem odd that using more information a slightly worse result (in terms of correct predictions) can be obtained, but as remarked before the number of correct predictions is not a suitable function to maximize. More correct predictions would have been made

by predicting everybody as finding the service moderately useful. It appears that as expected the last four components contribute no discriminating power and further discussions will concentrate on the analysis using thirteen components. The coefficients of its discriminant functions were:

TABLE 28

DISCRIMINANT FUNCTIONS ON THIRTEEN PRINCIPAL COMPONENTS

Satisfaction group		1	2	3
Constant term		-17.60	-17.46	-19.29
Component	1	- 0.85	- 0.93	- 1.96
"	2	0.41	0.53	0.22
"	3	2.04	1.87	2.39
"	4	- 1.02	- 0.54	0.43
"	5	- 4.04	- 4.00	- 2.88
"	6	- 2.69	2.29	- 2.65
"	7	2.36	1.38	3.06
"	8	- 0.26	- 0.78	0.48
"	9	2.46	1.66	1.69
"	10	1.19	1.00	0.94
"	11	0.28	0.27	- 2.40
"	12	10.80	10.87	11.72
"	13	- 0.97	1.73	- 0.62

The components which are most powerful in discriminating between satisfaction groups are those in which one or more of the differences between the coefficients are large. The largest differences are between groups 1 and 3 (2.68) and 2 and 3 (2.67) for component 11. To have a low value for component 11 an individual must teach and not use an information service and probably think that issues were not frequent enough. Such an individual will be more likely to be very satisfied, than one with the opposite characteristics, other things being equal. However, since the constant term for function 3 is considerably less than that for the other functions, it is probably necessary for several of the components

which can discriminate in favour of group 3 to have suitable values before an individual is predicted to be in group 3. Component 7 has a difference of 1.68 between its coefficients for groups 2 and 3, but a much smaller difference, .70, between groups 1 and 3. This implies that someone with a high value for component 7 (someone who had several of the following qualities: did not receive an index; found the entry format adequate; wanted more books; wanted more journals; did not want more reports; wanted less of anything) was more likely to have found the service either very useful or of little or no use, and less likely to have found it of some use. This example highlights the fact that although using principal components avoids problems of correlated variables it can still produce perplexing problems of interpretation. The three functions of components can be transformed into functions of the original variables as follows:

TABLE 29

DISCRIMINANT FUNCTIONS FROM TABLE 28 TRANSFORMED BACK TO THE ORIGINAL VARIABLES

Satisfaction group	1	2	3
Constant term	-17.60	-17.46	-19.29
Coverage (RPQ)	2.29	2.35	2.71
Entry format (AKC)	2.67	2.74	3.39
Frequency (193)	2.72	2.82	2.40
Index (NY)	3.86	3.85	2.14
Practice	- 1.74	- 1.64	- 2.01
Teaching	- 1.61	- 1.03	0.66
Research	- 1.31	- 1.48	- 1.01
Uses information service	0.49	0.61	- 0.43
Too frequent	2.94	2.91	2.80
Not frequent enough	5.81	5.01	7.44
Adequacy of entry format	5.74	5.71	6.33
Too few items/issue	0.04	- 0.43	- 0.13
Too many items/issue	- 2.85	- 3.53	- 3.64
More journals	- 0.31	- 0.98	0.61
More books	0.90	0.67	0.71
More reports	4.74	4.95	4.53
Less of anything	3.43	2.59	3.02

The differences between the coefficients of the variables for the three groups are mostly of the same order as those in the two subsidiary analyses (see section 5.4). A comparison of these functions with those obtained in the first analysis (see section 5.3) would show up any large effect on the comparable variables of the different representation of the service parameters, and the use of principal components as opposed to the original variables. The overall performance of the two sets of discriminant functions is very similar. The important factors for comparison of the coefficients are the ordering of the three coefficients for each variable and the size of the differences between these coefficients. Considered in this way the coefficients for the practice, teaching and research variables differ greatly between the two analyses. This might be expected because of the high (positive or negative) correlations between these variables. For the other variables the ordering of the coefficients are mostly the same, but the sizes of the differences vary. Looking at the individual allocations, there is good agreement in the predictions for people actually in groups 1 and 3, but for about 40% of those actually in group 2 the predicted groups differ between the two analyses. The implication is that the functions obtained are probably not very stable, and depend on the particular data used.

5.7 Overlap between predicted satisfaction levels

It is particularly simple where allocation of observations to classes is made by comparison of function values for each class, to consider overlap between classes. An observation can be considered to lie in the overlap between two classes if the difference between the highest function value and one of the others is less than a certain value. An observation lies in the overlap of several classes if the range of corresponding function values is less than the chosen value.

Using the discriminant functions obtained in the last analysis (see section 5.6), and overlap values of 0.5 and 0.25 the following extended tables of predicted satisfaction levels are obtained.

Actual group	Predicted group (overlap value 0.5)						
	1	(1,2)	2	(2,3)	3	(1,3)	(1,2,3)
1	13	16	5		3	1	3
2	7	24	15	6	6	1	5
3		1		2	9		1

Actual group	Predicted group (overlap value 0.25)						
	1	(1,2)	2	(2,3)	3	(1,3)	(1,2,3)
1	16	8	10	1	4	1	1
2	12	13	25	1	9	2	2
3			1	1	11		

The percentage of individuals predicted to be in incorrect groups, or overlaps not including the correct group is 43.2% allowing no overlap, 33.1% with overlap value 0.25, and 19.5% with overlap value 0.5.

One interesting point is that the method of discriminant analysis does not assume any particular relationship between the groups, so there is no reason why the method should produce more overlap between groups 1 and 2 than between groups 1 and 3. It appears that the factors which determine whether someone finds the service of little use or moderately useful are more complicated than the factors which determine whether the service is very useful.

5.8 Conclusions from principal component and linear discriminant analyses

It had been hoped that these analyses might show a few factors to be of great importance in determining the usefulness of an information service of this kind. Unfortunately this was not the case. People's requirements clearly vary considerably. The analyses accentuated the fact that the sample, and therefore probably the class of planners, contains two main groups of people; those doing research and possibly teaching, who want maximum coverage; and those who are practising planners and find compact information on core material most satisfactory. It appears that on the whole the first category are more likely to find a service similar to this experimental one useful, and independent of this split those who teach and do not normally use an information service would find it useful.

Apart from this a few points can be made. More coverage than required made the service less useful. Adequacy of entry format was quite highly correlated with increase in detail of items. The attitude to the adequacy of the entry format appears to be more important than the entry format itself in determining satisfaction. The inclusion of an index was not associated with increased satisfaction. In fact the reverse was true.

Frequency and attitudes to it appear to have no consistent effect on satisfaction, since the different analyses give different relative orderings of the coefficients of these variables. This may be because other factors, affected by frequency, such as size of issue, currency of material, or an individual's usual method of keeping up with the literature, are in fact more important in determining satisfaction. When considered separately the attitude variables gave rise to better discriminators than the state variables.

6.0 SUMMARY AND CONCLUSIONS

The objective of the experiment was to discover how the usefulness of an abstracting or indexing journal varies with the type and style of the publication. However the study also showed some clear distinctions between what users thought that they wanted and what they in fact found useful. The experimental service, in forty-eight different publication styles, was distributed to 192 planners employed in research and teaching and in planning practice. Each participant received one publication style, and the four parameters varied were coverage, content of entry, frequency of publication and inclusion of an index. For evaluation a tear-off sheet was attached to each issue and a questionnaire was sent with the final issue (see Appendix E). In all, 129 people returned questionnaires, of whom 102 also returned sheets which were at least partially completed. There were 3 people who returned sheets but no questionnaire. The response rate for the questionnaire was 68%, and that for the sheets 55%. Of the questionnaire respondents 59% normally used an information service. Of the respondents 58% were to some extent involved in planning practice, 59% in research and 39% in teaching. One-third were engaged only in practice, with 23% doing research and teaching and

15% doing research only. All the analyses emphasized the difference in requirements between practitioners and academics. Those teaching and doing research were on the whole more satisfied with the service, and wanted greater coverage, and more of them thought there were too few items per issue. They were also more likely (about 60% as opposed to 40% for practitioners) to prefer wide coverage with no abstracts to limited coverage with good abstracts.

There appears to be a complex interactive effect of changes in frequency and coverage. There is a much greater variation in the proportion of people wanting coverage of more journals when broken down by frequency than when broken down by coverage of the service received (57% of those receiving weekly service, 47% for 3-weekly services, and 35% for 9-weekly services; 50% for general coverage, 47% for core coverage, and 40% for urban planning coverage). This may be due partly to a constraint of the experiment in that some journals published quarterly or less frequently will not have been covered in the nine week period of the weekly services. An individual interested in some of these journals might notice these omissions and assume that they were not included in the coverage. Several respondents suggested that a list of journals covered would be desirable. Changes in frequency and coverage also affect the number of items in each issue. It is clear that the volume of material in an issue is an important factor, at least for a service sent to individuals and intended for keeping pace with current material, rather than one held by libraries for retrospective literature searches. Some 62% of recipients of the services with about 400 items per issue thought that this was too many, as opposed to 26% for services with about 150 items per issue and 8% for services with about 50 items per issue. These small issues were thought to contain too few items by 36% of recipients. Almost half the recipients of weekly services thought they were too frequent, while about 70% of those receiving three-weekly and nine-weekly services thought the frequency of the service received was about right.

Most people consider that increased frequency of issue is not desirable at the expense of increased coverage or inclusion of abstracts and indexes. However, 19% of respondents would prefer a fortnightly service without abstracts and with rudimentary index to a two-monthly service with full abstracts and indexes. About the same number would

be prepared to pay extra for a fortnightly service with titles only and a keyword index, to supplement a two-monthly service with good abstracts and indexes. Results from the tear-off sheets are unreliable because of the poor response rate (55%) and the enormous variance in the use made of the sheets. However, the proportions of material covered which were noted and followed up both increased with frequency of issue. This indicates that, although most people did not regard increased frequency as important, small frequent issues are probably more thoroughly read than larger issues, and perhaps prompt more frequent visits to a library. The proportion of items followed up which proved useful was in fact highest for the weekly services. However, the proportion of these items useful for general knowledge rather than directly for practice, research or teaching increased with increasing frequency of issue. The discriminant analyses showed no consistent effect of frequency, or the attitudes to frequency on overall satisfaction. It therefore appears that the effect on usefulness of increased frequency is complex. Scanning frequent issues and vists to libraries are time-consuming and although a greater number of useful items may be found most people (77%) would like a service to be no more frequent than monthly.

The three types of coverage in the experiment were the normal coverage in section F of Geo Abstracts (P), core material only (Q), and urban planning material from a wider range of sources (R). Under 10% of respondents wanted fewer journals, books or reports covered, while 46% wanted more journals covered, 38% more books and 61% more reports. Broken down by coverage type these figures were very similar for P and Q coverage while fewer recipients of the urban planning service (R) wanted more journals covered, and more wanted more books and reports covered. Despite the considerable demand for greater coverage more recipients of the core coverage (Q) were very satisfied with the service as a whole. There were indications from the tear-off sheets that the P and R coverages were more useful for research while the Q coverage was more useful for practice. Coverage received was not very important in predicting satisfaction level. The choice between wide coverage with no abstracts and limited coverage with good abstracts was a difficult one. Overall, 49% preferred wide coverage and 51% good abstracts. Practitioners slightly favoured abstracts and academics favoured wide coverage. This emphasizes the different requirements of these two groups.

Expressed preferences on entry content also differed from the evaluations of usefulness. Most respondents expressed a preference for abstracts over titles with or without keywords, although quite a few found, or thought they would find, titles with keywords satisfactory. However, those receiving services with abstracts were not more satisfied with the service as a whole. In fact, more recipients of services with titles only found the service very useful, and this was reflected in the effect of entry format on the discriminant functions. Results from the responses on the tear-off sheets are unreliable because of the great variance between individuals in their use of the sheets, but the proportion of items noted that were followed up was slightly higher for services with abstracts. However, the same ratio was lower for services with keywords than for services with titles only. The proportion followed up that was useful, was in fact highest for the services with titles only.

Another parameter for which expressed attitudes were not borne out by satisfaction with service was the inclusion or not of indexes. The author index was used by only 22% of recipients of services with indexes, and most of those who did not use it said that they did not need to. The subject index was used by 53% and seven of those not using the index (26%) did not use it because it was not easy to use. Of those who did not receive an index, 80% said they would like an index, and 87% of those wanted a subject index. Only 17% required an author index. However the inclusion of an index did not increase satisfaction with the service. In fact 12 (19%)of those receiving no indexes found the service very useful as opposed to 5 (8%) of those receiving indexes. This discrepancy may be partly accounted for by the type of index provided (see Appendix G(4)). There was considerable demand for a more reliable subject index and for grouping of items under broad subject headings. A related point is that several people suggested that the title, rather than the author, should be prominent in the entries (see Appendix G(1-3)). The proportion using or not using the index did not vary noticeably with the frequency of the service; this is somewhat surprising, because the nine-weekly issues contained about 400 items and the weekly issues about 50 items. This is probably because although an index is obviously essential when searching retrospectively for literature on a particular topic, it is often unnecessary for keeping up with current literature. Grouping under broad subject headings is probably more helpful.

Results from the discriminant analyses were rather disappointing in that it did not prove possible to predict accurately overall satisfaction with the service from other factors, either from service parameters or from attitudes to particular features of the services. This reinforces the hypothesis that people require very different features in information services. The most important factor in determining satisfaction appeared to be the type of work. Academics were more satisfied than practitioners. There was also some indication that those who did not normally use an information service were more impressed than those who did. In particular some people commented that the Department of the Environment Library Bulletin was more suited to their requirements, and these people clearly did not find the service very useful. Satisfaction could be predicted better from attitudes to the service received than from the values of the service parameters.

An important point to emerge from this experiment was that academics and practitioners require different qualities in an information service. These differences appeared more important than variations in coverage, entry content and frequency and whether an index is included in determining satisfaction with the service. On the whole academics want coverage to be as wide as possible, while practitioners are unwilling to waste time following up items which are difficult to obtain and would prefer more compact issues.

One final point is worth noting. Information scientists have a natural tendency to assume that the usefulness of an abstracting or indexing journal increases with the effort and expense put into full abstracts and complex indexes. This assumption is reinforced by surveys of user opinions; given a choice most users ask for all the options. Yet this study has shown that for current awareness, users get greater satisfaction from a simple publication which is easy to scan quickly. The measureable difference in satisfaction is not great, but it is significant and the best secondary service is not necessarily the most expensive.

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GEO ABSTRACTS List of journals abstracted in 1971. Norwich, University of East Anglia, 1971.

KENDALL, M.G., & STUART, A. The advanced theory of statistics, Vol.3. London, Charles Griffin, 1966.

MUNICIPAL YEAR BOOK 1972 London, Municipal Journal, 1972.

ROYAL TOWN PLANNING INSTITUTE. List of members. London, The Institute, 1971.

APPENDIX A

JOURNALS ABSTRACTED FOR Q (CORE) COVERAGE

American Economic Review
American Institute of Architects Journals
Annales de Geographie
Annals of the Association of American Geographers
Architectural Review
L'Architecture d'Aujourd'hui
Association of American Geographers Commission on College Geography
Resource Papers

Building
Built Environment

The California Geographer
Casabella
Chartered Institute of Transport Journal
University of Chicago Department of Geography Research Papers
City
Civil Engineering ASCE
County Councils Gazette

Design

Economic Geography
Economics of Planning
Ekistics

Geoforum
Geografiska Annaler B
Geographical Analysis
Geographical Review

Housing Review

International Journal of Environmental Studies

Journal of Environmental Planning & Pollution Control
Journal of the Irrigation & Drainage Division ASCE
Journal of Leisure Research
Journal of Professional Activities Engineering Issues ASCE
Journal of the Royal Town Planning Institute
Journal of the Sanitary Engineering Division ASCE
Journal of the Urban Planning & Development Division ASCE

Land Economics
Landscape Architecture
Long Range Planning

Municipal Journal

Options Mediterranéennes

Petermanns Geographische Mitteilungen
Plan (Sweden)
Planning (ASPO)
Planning Outlook
Public Management

Regional & Urban Economics
Regional Studies

Social Trends
Socio-economic Planning Sciences
Surveyor

Technological Forecasting & Social Change
Terra
Tidschrift voor Economische en Sociale Geografie
Town & Country Planning
Town Planning Quarterly
Town Planning Review
Traffic Engineering
Transportation
Transportation Engineering Journal ASCE
Transportation Research

Urban Land
Urban Land Institute Research Monographs
Urban Studies
Urbanisme

Water Research

Zeitschrift für Wirtschaftsgeographie

APPENDIX B

BOOKS ABSTRACTED FOR STYLE Q

Linear programming for urban development plan evaluation.
CHARLES D. LAIDLAW (Praeger)

Environmental planning: an economic analysis.
JAMES C. HITE & EUGENE A. LAURENT (Praeger)

After the Planners.
ROBERT GOODMAN (Penguin)

Report of the Commission for the New Towns 1972.
American Society for Planning Officials Yearbook 1971.
Planning for urban growth.
ed JOHN L. TAYLOR (Praeger)

Reports of the Scottish New Town (listed) Development Corporations for 1972.
Analytical models for urban and regional planning.
IAN MASSER (David & Charles)

Spatial planning in the small economy: a case study of Ireland.
HELEN B. O'NEILL (Praeger; Pall Mall)

Problems in Polish economic planning: continuity, change and prospects.
GEORGE R. FEIWEL (Praeger)

Governing the London region.
RONALD L. FOLEY (U. Calif)

Battle for the environment.
TONY ALDOUS (Fontana)

Reform of metropolitan governments.
S. ERIE & OTHERS (Regional Resources for the Future)

American city planning.
MEL SCOTT (U. Calif)

New tools for urban management.
RICHARD S. ROSENBLOOM & JOHN R. RUSSELL (Harvard U.P.)

Land use planning.
E.F. ROBERTS (M. Bender)

Urban space and structures.
ed LESLIE MARTIN & LIONEL MARCH (Cambridge U.P.)

Urban renewal 1971
ed STANLEY MILLWARD (U. Salford)

City classification handbook: methods & applications.
ed B.J.L. BERRY & KATHERINE B. SMITH (Wiley)

APPENDIX C

FREQUENCY LIST OF CITED JOURNALS FROM OIP

		Journals covered by Geo Abstrac		
		section D	section C	sectio F
84	Jnl.American Inst.Planners			
59	Papers & Proc.Regional Science Assoc.		X	
56	Annals Assoc.American Geographers	X	X	X
55	American Sociological Review			
54	American Economic Review		X	
48	Geographical Review	X	X	
40	Jnl.Regional Science	X	X	X
37	Jnl.Royal Town Planning Inst.	X	X	X
36	Land Economics	X	X	
33	Review Economics & Statistics			
32	American Jnl.Sociology			
31	Jnl.Royal Statistical Soc.			
30	Urban Studies	X	X	X
30	Jnl.Political Economy		X	
28	Jnl.Transport Economics & Policy			X
27	Architects Jnl.			
27	Econometrica			
27	Economic Jnl.		X	
26	Town Planning Review	X	X	
25	Highway Research Record		X	
24	Economic Geography	X	X	X
23	Regional Studies	X	X	X
20	Traffic Engineering & Control			
19	Rural Sociology	X	X	
17	American Jnl.Agricultural Economics		X	
17	Social Forces			X
17	Trans.Inst.British Geographers	X	X	
16	Jnl.Social Issues			
15	Quarterly Jnl.Economics			
14	Lund Studies in Geography			
14	Oxford Economic Papers		X	
13	Traffic Quarterly			
12	Economic Development & Cultural Change		X	
12	Management Science			
11	Demography			
11	Human Relations			
11	Law & Contemporary Problems			
11	Official Architecture & Planning	X	X	X
11	Science	X		
10	Jnl.Forestry			
10	Operations Research			
10	Photogrammetric Engineering	X		
10	Southern Economic Jnl.			
9	American Political Science Review			
9	Geographical Analysis			
9	Jnl.Acoustical Soc.America	X	X	
9	Jnl.American Statistical Assoc.			
9	Review Economic Studies			
9	Tijdschrift Economische Sociale Geografie	X	X	X
9	Town & Country Planning	X	X	
8	Agricultural History Review			

		D	C	F
8	Geografiska Annaler			
8	Geographical Jnl.	X	X	X
8	Jnl.Inst.Water Engineers			
8	New Society			
8	Transportation Research			
7	American Jnl.Public Health			
7	Annals American Academy Political & Social Science			
7	Daedalus			
7	Environment & Planning	X	X	X
7	Geography	X	X	X
7	Landscape	X		
7	National Tax Jnl.			
6	Economic Trends			
6	Proc.Inst.Civil Engineers			
6	Scientific American	X	X	
5	Administrative Science Qtly.			
5	American Behavioral Scientist			
5	Archiv. fur Meteorologie Geophysik Bioklimatologie			
5	Jnl.Abnormal & Social Psychology			
5	Manchester School Economic & Social Studies			
5	National Institute Economic Review			
5	Natural Resources Jnl.		X	
5	Operational Research Qtly.			
5	Professional Geographer			
5	Water Pollution Control			
4	Archives Environmental Health			
4	Dept. Employment Gazette			
4	Ecology			
4	Farm Economist			
4	Internat.Social Science Jnl.			
4	Jnl.Sound & Vibration			
4	Modern Tramway & Light Railway Review			
4	Monthly Labor Review			
4	Papers Peace Research Soc.			
4	Revue Economique			
4	Scottish Jnl.Political Economy			
4	Social Problems		X	
4	Sociological Inquiry			
4	Sociological Qtly.			
4	Trade & Industry			
4	Weatherwise			
4	Western Economic Jnl.			
4	Westminster Bank Review			
3	American Sociologist			
3	Arena			
3	ASPO Newsletter			
3	Behavioral Science	X		
3	Bull.Oxford Univ.Inst.Statistics			
3	Canadian Geographer			
3	Economica			
3	Economie Appliquee			
3	Ekistics		X	
3	Fortune	X	X	
3	Geographical Magazine			
3	Harvard Business Review			
3	Inquiry			
3	Jnl.Agricultural Economics	X	X	
3	Jnl.Economic History			

		D	C	F
3	Jnl.Human Resources			
3	Jnl.Social Psychology			
3	Monthly Weather Review			
3	Nature			
3	Pacific Sociological Review			
3	Proc.Assoc.American Geographers			
3	Proc.Highway Research Board	X	X	
3	Public Opinion Qtly.			
3	Science Jnl.			X
3	Scottish Geographical Magazine			X
3	SIAM Jnl.Applied Mathematics			
3	Solar Energy			
3	Surveyor			
3	Tokyo Jnl.Climatology			
3	Traffic Engineering			
3	Trans-Action			
3	Trans.American Geophysical Union			
3	Trans.Bartlett Soc.			
3	Water Resources Research	X	X	X
2	AIP Newsletter			
2	American Forests			
2	American Jnl.Psychology			
2	American Psychologist			
2	Annals Mathematical Statistics			
2	Antiquity			
2	Appraisal Jnl.			
2	Architect & Building News			
2	Arctic & Alpine Research			
2	Arkitektur			
2	Biometrics			
2	British Jnl.Industrial Relations			
2	Bull.American Meteorological Soc.			
2	Bull.Geological Soc.America	X		
2	Bull.Internat.Statistical Inst.			
2	Bull.Quantitative Data for Geographers			
2	Canadian Jnl.Agricultural Economics		X	X
2	Chartered Surveyor	X	X	
2	Christian Science Monitor			
2	Chronique Sociale de France			
2	Climatological Bulletin (McGill Univ)			
2	College & Research Libraries			
2	East African Economic Review			
2	East Yorks.Local History Soc.			
2	Economic History Review			
2	Economist			
2	Food Research Inst.Studies		X	
2	Foreign Affairs			
2	Gerontologia Clinica		X	
2	Health Services Research			
2	Helgolaender Wissenschaftliche Meeresuntersuchungen			
2	Human Organization			
2	Industrial & Labor Relations Review			
2	Internat.Economic Review			
2	Internat.Jnl.Biometeorology			
2	Internat.Review Community Development			X
2	Irish Geography			
2	Jnl.Air Pollution Control Assoc.			
2	Jnl.British Waterworks Assoc.			

		D	C	F
2	Jnl.Business Univ.Chicago			
2	Jnl.Geography	X		
2	Jnl.Geology			
2	Jnl.Industrial Economics		X	
2	Jnl.Law & Economics			
2	Jnl.Marketing			
2	Jnl.Marriage & the Family			
2	Jnl.Politics			
2	Kyklos			
2	Metroeconomica			
2	Midlands Industry & Commerce			
2	Milbank Memorial Fund Qtly.			
2	National Banking Review			
2	Past & Present			
2	Petermanns Mitteilungen			
2	Population Bulletin			
2	Population Studies	X		
2	Proc.American Statistical Assoc.			
2	Proc.Soc.Water Treatment & Examination			
2	Psychological Review			
2	Public Administration Review			
2	Public Welfare			
2	Qtly.Bull.Research & Intelligence Unit G.L.C.			
2	Race			
2	Roads & Road Construction			
2	Saturday Review of Literature			
2	Schweizerische Zeitschrift für Volkswirts. & Statistik			
2	Social Science Qtly.			
2	Social Work			
2	Sociological Analysis			
2	Sociology			
2	Sociology & Social Research			
2	Survey of Current Business			
2	Time			
2	Urbanistica			
2	Welfare in Review			

APPENDIX D

ANALYSIS OF COVERAGE OF GEOGRAPHICAL ABSTRACTS

(i) GEOGRAPHICAL ABSTRACTS: SECTION C ECONOMIC GEOGRAPHY

Number of articles contributed from serial titles covered in 1970 and 1971

Number of Articles	Title
81	Zeitschrift für Wirtschaftsgeographie
44	Soviet Geography. Review and Translation
43	Voprosy Geografii
41	Revue de Geographie de Lyon
39	Skillings' Mining Review
39	Urbanisme
38	Mitteil. der Oesterr. Geog. Ges.
38	Probl. Razvitiya Proizvodit sil Bashkirii
37	Acta Geographica (Paris)
37	Ekonomicheska Geografiya. Mizhvidomchyi Naukovyi Zbirkyk
35	Journal of Regional Science
35	Rozmisheh Produktivn.sil URSR Resp. Mizhvid
34	Regional Studies
33	Geographische Rundschau
32	L'Information Geographique
32	Land Economics
31	Bulletin de la Societe Languedocienne de Geographie
30	Terra
29	Journal of Agricultural Economics
2	Annals Assoc. Amer. Geogs.
28	Retail Business (EIU)
26	Economic Geography
26	Proc. Assoc. American Geographers
24	Marketing in Europe
23	Cahiers d'Outre-Mer
23	Hommes et Terres du Nord
22	Geographia Polonica
22	Geographical Review
21	Urban Studies
21	Water Resources Research
20	Economie Rurale
20	Official Architecture and Planning
20	Tijdschrift voor Economische en sociale Geografie
19	Petroleum Press Service
19	Transactions Institute of British Geographers
18	Ad Novas - Norwegian Geog. Studies
18	Annales de Geographie
18	Industries et Travaux d'Outre Mer
18	Tasmanian Journal of Agriculture
18	Turkish Economic Review
17	Chartered Surveyor
17	Industrial Archaeology
17	Joufnal of the Town Planning Institute
17	Mediterranée
17	Norois
17	L'Universo
16	Geographical Review Japan
16	Town Planning Review
15	Banco di Roma. Review of Economic Conditions in Italy

Number of Articles	Title
14	A.N.Z. Bank Quarterly Survey
14	Geography
14	Vestnik Leningradskogo Universiteta Geologiya-Geografiya
13	American Journal of Agricultural Economics
13	Fortune
13	Mining Congress Journal
13	Population (Paris)
13	Revue Geographique de L'Est
12	Economic Botany
12	Economic History Review
12	Földrajzi Ertesito
11	Geographical Outlook (Ranchi, India)
11	Journal of Tropical Geography
11	Madagascar: Revue de Geographie
11	Pakistan Development Review
11	Przeglad Geograficzny
10	I.I.D.C. Journal
10	Business Review (Federal Reserve Bank of Philadelphia)
10	Indian Forester
10	Petroleum Review
10	Polar Record
10	Rivista di Agricoltura Subtropicale e Tropicale
10	Southeastern Geographer
9	Albertan Geographer
9	California Geographer
9	Fennia
9	Geographie/Aardrijkskunde
9	Nauchnye Trudy Tsentralny Nauchno-Issledovatelskiy Ekon. Institut
9	Probl. Razvitiya Proizvodit sil Chitinsk
9	Revista de Statistica (Romania)
9	Science Reports, Tohoku Univ. 7th Ser., Geography
9	Turkiye Iktisat Gazetesi
9	Vie d'Italia e del Mundo
8	Bollettino della Societa Geografica Italiana
8	Commercial Fisheries Review
8	F.A.O. Monthly Bulletin Agricultural Economics and Statistics
8	Geographical Magazine
8	Akad Nauk SSSR Ser. Geog.
8	Oriental Geographer
8	Probleme Economice
8	Scientific American
7	Asian Survey
7	Banca Nazionale del Lavoro Quarterly Review
7	Bulletin of the Peak District Mines Historical Society
7	Current Affairs Bulletin
7	Economic Geography (Moscow)
7	Highway Research Record
7	Journal of Economic History
7	Outlook on Agriculture
7	Petroleum Times
7	Soviet Studies
6	Acta Geographica (Helsinki)

Number of Articles	Title
6	Bulletin de l'Association de Geographes Français
6	Cement, Lime and Gravel
6	East Midland Geographer
6	Dokumentacja Geograficzna
6	Ekistics
6	Fishing News International
6	Geographical Journal
6	Irish Journal of Agricultural Economics and Rural Sociology
6	Journal of the Institute of Petroleum
6	Land Research Series (CSIRO)
6	Nauchnye Trudy Moskovskiy Instituta Inzhenerov Zemleustroystva
6	Norsk Hvalfangst-Tidende
6	Petermanns Geog. Mitteil.
6	Produktivite Verimlikik
6	Sociologia Ruralis
6	Statisztikai Szemle
6	Trudy-Azerbaidzhanskoe Geograficheskoe Obshchestvo
6	Unasylva
6	Vestnik Moskovskogo Universiteta, Geografiya
6	Water and Water Engineering
5	Annales Universitatis Scientarum Budapestinensis de Rolando Eotvos Nominatae, Sectio Geographica
5	Czasopizmo Geograficzne
5	Ekon. Geogr. Geogr. Prom-Sti
5	Folia Geographica. Ser. Geographica-Oeconomica
5	Geografichnyi Zbirnik L'Vivskyi Viddil, Geografichne Tovarystvo
5	Geografski Glasnik (Zagreb)
5	Geographische Zeitschrift
5	Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Ser. Obschchestvennykh Nauk
5	Izvetsja na Vishija Institut Zanarodno Stopanstvo (Varna)
5	Journal of the Soil Conservation Service of New South Wales
5	Madencilik
5	Problems of Economics
5	Proc. of the Hampshire Field Club and Archaeological Society
5	Revue Geographique des Pyrenees et du Sud Ouest
5	Revue Juridique et Economique du Sud-Ouest
5	Science and Culture
5	Studii si Cercetari de Geologie, Geofizica, Geografie, Seria Geografie
5	Tekstilnaya Promyshlennost
5	Town and Country Planning
5	Unipede Paper
5	Yearbook of the Association of Pacific Coast Geographers
4	Acta Oeconomica
4	American Industrial Development Council Journal
4	Analele Universitatii Bucuresti, Geologie, Geografie
4	Area

Number of Articles	Title
4	Bulletin of Indonesian Economic Studies (Canberra)
4	Doklady Instituta Geografii Sibiri i Dal'nego Vostoka
4	Economic Journal
4	Economies et Societes
4	Electrical Review
4	Erde
4	Focus
4	Földrajzi Közlemenyek
4	Geografisch Tijdschrift
4	Geographical Analysis
4	Indian Journal of Agricultural Economics
4	Journal of the West African Science Association
4	Journal. Statistical and Social Inquiry Society of Ireland
4	Maden Tetkik ve Arama Enstitusu Yayını
4	Mediterranea
4	Midland Bank Review
4	Narodn. Kh-Vo Armenii
4	New England Business Review
4	Nigerian Geographical Journal
4	Norsk Geogr. Tidskrifft
4	Northern History
4	Options Mediterranéenes
4	Oxford Economic Papers
4	Revue Roumanie de Geologie, Geophysique et Géographie, Serie de Geographie
4	Rivista Geografica
4	Rybnoye Khozyaystvo
4	Sevk ve Idari Dergisi
4	Studia Universitatea Babes-Bolya, Cluj, Geologia-Geographia
4	Tijdschrift voor Vervoerswetenschappen
4	Trudy Tashkentsk. In-ta Inzh. Zh. -D Transp.
4	World Fishing
3	Acta Universitatis Carolinae, Geographica
3	Agrarwirtschaft
3	American Economic Review
3	American Journal of Economics and Sociology
3	Annals of Arid Zone
3	Atom
3	Australian Geographer
3	Australian Institute of Agricultural Science Journal
3	Australian Geog. Studies
3	Business Review (Fed. Reserve Bank of Dallas)
3	Canadian Journal of Agricultural Economics
3	Comertul Modern (Romania)
3	Doklady i Soobshcheniya. Vses. Nauchno-Issledovatelskiy Inst. Ekon. Sel'sk. kh.
3	Doklady Otdeleniı i Kommissii, Geograficheskoe Obshchestvo SSSR
3	Economic Development and Cultural Change
3	The Economist
3	Ekonomicky Casopis
3	Ezhegodnik, Estonskoe Geograficheskoe Obshchestvo

Number of Articles	Title
3	Geographer
3	Godishnik na Sofijskija Universitet, Geologo-Geografski Fakultet
3	Grands Amenagements Regionaux
3	Indian Economic Journal
3	Irish Geographical Studies
3	Izv. Akad. Nauk Azerbaydzhanskoy SSR
3	Izvestiya Zabaikal'skii Filial Geog. Obshch. SSSR
3	Közgazdasagi Szemle
3	Monthly Review (Federal Reserve Bank of Minneapolis)
3	Materialy Khar'kovsk Otd. Geogr. O-VS Ukrainy
3	Mining Engineering
3	Nauchnye Zapiski Geograficheskoe Obshchestvo SSSR, Voronezhskii Otdel.
3	New Scientist
3	Offshore
3	Pacific Viewpoint
3	Proc. Inst. Elec. Eng.
3	Regional and Urban Economics
3	Regional Science Association Papers
3	Review of Marketing and Agricultural Economics
3	Rivista Geografica Italiana
3	Scottish Journal of Political Economy
3	Societe Guernesiaise, Report and Transactions
3	Studii si Cercetari de Calcul Economic si Cibernetica Economica
3	Svensk Geografisk Arsbok
3	Transactions, New York Academy of Sciences
3	Uchenye Zapiski, Moskovskiy Oblastnoy Pedagogicheskiy Institut
3	Uchenye Zapiski Naucno-Issledovateliskii Institut Pri Sovetsk Min. Chuvashk
3	Universita Catania Annali Della Faculta di Economica e Commercio
3	Weather
2	Agricultural Economics Research
2	Agricultural Science Review
2	Agricultural Situation in India
2	Agriculture
2	Bulletin of the Mineral Research and Exploitation Institute of Turkey
2	Business History
2	California Management Review
2	Canadian Geographical Journal
2	Ceredigion
2	Chemistry and Industry
2	Ciba Review
2	Coğrafya Arastirmalari Dergisi
2	Current Scene (Hong Kong)
2	Documentation Française
2	East London Papers
2	Economic Bulletin for Africa
2	EFTA Bulletin
2	Ekonomika Poljoprivrede
2	Ekonomika Radyans'koi Ukraini (Ekon. Sovetskov Ukrainy)

Number of Articles	Title
2	Electronics and Power
2	Environment and Planning
2	Farm Management (Melbourne)
2	Finance and Development
2	Foreign Affairs
2	Gazdalkodas
2	Gazdasag
2	Geograficky Casopis
2	Geografiya (Sofia)
2	Giornale Degli Economisti
2	IEEE Paper
2	IEEE Spectrum
2	Industrialisation and Productivity
2	Industry of Free China
2	Institute of Transport Journal
2	Int. Review of Administrative Science
2	Izvestiya Vsesoyuznogo Geograficheskogo Obshchestva
2	Izvestiya Vysshikh Uchebnykh zavedeniy Geodeziya i Aerofotos'emka
2	Izv. na Geograficheskoto Geografsko Druzestvo
2	Japanese Journal of Geology and Geography
2	Jerusalem Studies in Geography (1970-)
2	Journal of Common Market Studies
2	Journal of Industrial Economics
2	Journal of Political Economy
2	Journal of the Institute of Fuel
2	Journal Royal Agric. Soc. of England
2	Landbouwkundig Tijdschrift
2	Land Reform (FAO)
2	Landwirtschaft-Angewandte Wissenschaft
2	Lupta de Clasa
2	Management Science
2	Mariners Mirror
2	Middle East Journal
2	Mirovaya Ekonomika i Mezhdunarodnye Otnosheniya
2	Molochnaya Promyshlennost'
2	Natura, Seria Geografia-Geologie
2	Natural Resources Journal
2	Nauchnye Doklady Vysshey Shkoly, Ekonomicheskye Nauki
2	Nauchnye Zapiski Leningrads Finans.-Ekon.Institut
2	Netherlands Journal of Agriculture Science
2	Nuclear Engineering International
2	OECD Agricultural Review
2	Pakistan Geographical Review
2	Papers and Proc. Regional Science Association
2	Papers, Peace Research Society
2	Photo Interpretation
2	Planovo Khozyaystvo
2	Polish Perspectives
2	Priroda
2	Proceedings, Royal Society, Victoria
2	Produktivite
2	Raion Planirovka
2	Rovista Geografica
2	Revue d'Auvergne

Number of Articles	Title
2	Revue Francaise de l'Agriculture
2	Rivista di Economia Agraria
2	Rural Africana
2	Sakharnaya Promshlennosty
2	Scottish Fisheries Bulletin
2	Skandinaviska Banken Quarterly Review
2	Social and Economic Studies
2	Studii si Cercetari Economice
2	Technical Bull. Washington Agric. Expt. Stn.
2	Three Banks Review
2	Tijdschrift Belg. Ver. Aardr. Stud.
2	Tourist Review
2	Trans. of the Bristol and Gloucestershire Archeological Society
2	Trudy Kishinevskii Politekhn. Institut
2	Trudy Novosib. S-Kh. Instituta
2	Turrialba
2	Uchenye Zapiski Tartuskogo Universiteta
2	Universita Cagliari Annali Della Facolta di Economia e Commercio
2	Universita Palermo Annali Della Facolta di Economia e Commercio
2	Vierteljahrshefte zur Wirtschaftsforschung
2	World Petroleum

(iv) GEOGRAPHICAL ABSTRACTS: SECTION B

Number of articles contributed from serial titles covered, 1970 and 1971

Number of Articles	Title
69	International Yearbook of Cartography
53	Urbanisme
51	Proceedings of the Association of American Geographers
48	Journal of the Town Planning Institute
46	Population (Paris)
44	Norois
43	Annals of the Association of American Geographers
42	Town Planning Review
40	Soviet Geography. Review and Translation
37	l'Universo
33	Acta Geographica (Paris)
33	Annales de Geographie
32	Zeitschrift fur Wirtschaftsgeographie
31	Cartographic Journal
30	Geographical Review
30	Revue de Geographie de Lyon
27	Transactions of the Institute of British Geographers
26	Bulletin de la Societe Languedocienne de Geographie
25	Geographische Rundschau
25	Journal of Regional Science
25	Terra
23	Revue Geographique de l'Est
23	Rural Sociology
22	California Geographer
22	Mitteil. der Oesterr. Geog. Ges.
21	Sociologia Ruralis
21	Vestnik Leningradskogo Universiteta. Geologiya-Geografiya
20	Ekistics
20	Geodeziya i Kartografiya
19	Geographical Journal
19	Science
18	Quaternaria
17	Mediterranee
16	Geographie/Aardrijkskunde
16	Geographische Zeitschrift
16	Official Architecture and Planning
16	Lenskye Zapiski Perms. Universitet
15	Tijdschrift voor Economische en Sociale Geografie
14	(Les) Cahiers d'Outre-Mer
14	Lyde
13	Acta Geographica (Helsinki)
13	Geography
13	Journal of Leisure Research

Number of Articles	Title
13	Przeglad Geograficzny
13	Urban Studies
12	Hommes et Terres du Nord
12	(L') Information Geographique
12	Land Economics
12	Madagascar: Revue de Geographie
12	Photogrammetric Engineering
12	Revue Roumanie de Geologie, Geophysique et Geographie, Serie de Geographie
11	Bollettino della Societa Geografica Italiana
11	Bulletin de l'Association de Geographes Francais
11	Geographia Polonica
11	Izv. Akad. Nauk. SSSR. Ser. Geog.
11	Polar Record
11	Sociological Studies (Cambridge)
11	Southeastern Geographer
10	Area
10	Chartered Surveyor
10	Ekonomichna Geografiya, Mizhvidomchyi Naukovyi Zbirkyk
10	Etudes Rurales
10	Photogrammetric Record
10	International Journal of Environmental Studies
10	Regional Studies
9	Albertan Geographer
9	Antiquity
9	Geografiya v Shkole
9	Land Reform (F.A.O.)
9	Petermanns Geog. Mitteil.
9	Population Studies
9	Remote Sensing of Environment
9	Studies in Family Planning
8	East London Papers
8	Geograficky Časopis
8	Geographical Magazine
8	Industrial Archaeology
8	Local Population Studies Magazine and Newsletter
8	Norsk Geogr. Tidskrifft
8	Pakistan Geographical Review
8	Planning Outlook (N.S.)
8	Progress in Geography
8	Studia Geographica. Cesk. Akad. Ved. Geografick Ustav Brno
8	Studii si Cercetari de Geologie, Geofizica, Geografie, Seria Geografie
7	Computer Contribution (State, Scol. Surv. Kansas Univ. of)
7	Current Affairs Bulletin
7	Economie Rurale
7	Fortune
7	Geografisch Tijdschrift
7	Population Review
7	Revue Geographique des Pyrenees et du Sud Ouest
7	Voprosy Geografii
6	Antarctic Journal of the U.S.
6	Asian Survey
6	Australian Geographer

Number of Articles	Title
6	Canadian Cartographer
6	Environment and Planning
6	Ethiopian Geographical Journal
6	Geographical Analysis
6	Geographical Review of Japan
6	Izvestiya Vsesoyuznogo Geograficheskogo Obshchestva
6	Journal of Agricultural Economics
6	Journal of Tropical Geography
6	Landscape
6	Proceedings of the Prehistoric Society
6	Science Reports Tohoku University, 7th Ser. Geography
6	Town and Country Planning
6	Vie d'Italia e del Mundo
5	Aerometody
5	American Antiquity
5	Analele Universitatii Bucuresti, Geologie, Geografie
5	Archaeological Journal
5	Arctic
5	Computer Applications in the Natural and Social Sciences
5	Economic Botany
5	Economic History Review
5	Fennia
5	Foldrajzi Ertesito
5	Geografski Glasnik (Zagreb)
5	Medieval Archaeology
5	Raumforschung u. Raumordnung
5	Revue Belge Geogr.
5	Sociedade de Geografia de Lisboa Boletim
5	Sociologia Sela
5	Stedebouw en Volkshuisvesting
5	Sussex Archaeological Collections
5	Svensk Geografisk Arsbok
4	Archaeologia Aeliana
4	Archaeologia Cambrensis
4	Archaeologia Cantiana
4	Behavioral Science
4	Boletin de la Sociedad Geografica de Colombia
4	Doklady Instituta Geografii Sibiri i Dal'nego Vostoka
4	Economic Geography (Moscow)
4	Folia Geographica, Ser. Geographica Oeconomica
4	Forum, Stiinte Sociale
4	Geografisk Tidsskrift
4	Pacific Viewpoint
4	Proceedings of the Dorset Natural History and Archaeological Society
4	Proceedings of the Hampshire Field Club and Archaeological Society
4	Scientific American
4	Statistica
4	UNESCO Courier
3	America Indigena

Number of Articles	Title
3	Anaiele Stiintifice Universitatii Al. I. Cuza Din Iasi, Geologie-Geografie
3	A.N.Z. Bank Quarterly Survey
3	Biuletyn Komitetu Przestrzennogo Zagospodarowa...
3	British Water Supply
3	Bulletin of the Ghana Geog. Assn.
3	Comunicari de Geografie
3	Czasopismo Geograficzne
3	Dokumentacja Geograficzna
3	Economic Geography
3	Ezhegodnik Estonskoe Geograficheskoe Obshchestvo
3	Foldrajzi Kozlemenyek
3	Forderungsdienst (Wien)
3	Fotointerpretacja W Geografii
3	Geographical Outlook (Ranchi, India)
3	IEEE Trans. Geosci. Electr.
3	Izvestiya Vysshikh Uchebnykh Zavedeniy Geodeziya i Aerofotos'emka
3	Journal of Geography
3	Journal of the West African Science Association
3	Mediterranea
3	Metorologiya i Gidrologiya
3	Natura, Seria Geografie-Geologie
3	Nauchnye Doklady Vysshey Shkoly, Ekonomicheskye Nauki
3	Nauchnye Trudy Moskovskiy Instituta Inzhenerov Zemleustroystva
3	Nauchnye Zapiski Geograficheskoe Obshchestvo SSSR, Voronezhskii Otdel
3	Oriental Geographer
3	Polski Przeglad Kartograficzny
3	Prace Geograficzne
3	Priroda
3	Proceedings of the Leatherhead and District Local History Society
3	Recherche (la)
3	Revue d'Auvergne
3	Revue de Geographie Marocaine
3	Rivista Geografica
3	Sbornik Nauchnyk Trudov, Permskiy Politekhnicheskiy Institut
3	Social and Economic Studies
3	Transactions. New York Academy of Sciences
3	Yearbook of the Association of Pacific Coast Geographers
3	Zeszyty Naukowe Uniwersytetu Mikolaja Kopernika W Toruniu. Nauki Matematyczno-Przyrodnicze, Geografia
2	Agra - Eur. Presse Inf. Dienst
2	American Scientist
2	Annales Universitatis Scientarum Budapestinensis de Rolando Eotvos Nominatae, Sectio Geographica
2	Annals of Arid Zone
2	Arkhitektura SSSR
2	Australian Geog. Studies
2	Banco di Roma. Review of Economic Conditions in Italy

Number of Articles	Title
2	Berichte uber Landwirtschaft
2	Bul. Akad. Shtintse RSS Mold. Izv. An Mold. SSR Ser. Obshchestv.
2	Bulletin of Indonesian Economic Studies
2	Bulletin of the Atomic Scientists
2	Cahiers des Ameriques Latines
2	Canadian Surveyor
2	Causses et Cevennes
2	Civilisations (Bruxelles)
2	Cografya Arastirmalari Dergisi
2	Community Development Journal
2	Ekonomika Sel'skogo Khozyaystva
2	Gazdalkodas
2	Geographer (India)
2	Geological Society of America Bulletin
2	Gigiena i Sanitariya
2	Godisnik na Sofijskija Universitet, Geologo-Geografski Fakultet
2	History
2	Innere Kolonization
2	Izv. Na. Balgarskoto Geografsko Druzestvo
2	Journal of Geological Education
2	Kwartalnik Historii Kultury Materianej
2	Mining Congress Journal
2	Modern Asian Studies
2	Narodn. Kh-Vo Armenii
2	Nauchnye Zapiski Leningrads. Finans.-Ekon. Institut
2	Nigerian Geographical Journal
2	Pacific Viewpoint, Monograph
2	Pakistan Development Review
2	Photogrammetria
2	Photo-interpretation
2	Problemy Arktiki i Antarktiki
2	Proceedings of the Royal Society, Victoria
2	Przeglad Geodezyjny
2	Publicaties van net Fysisch-Geografisch en Bodemkundig Laboratorium van de Un. van Amsterdam
2	Records of Buckinghamshire
2	Recreation News Supplement
2	Revue Geographique Alpine
2	Revue Tunisienne de Sciences Sociales
2	Schr. Inst. Stadtebau Raumordnung
2	Schriftenreihe Flurbereinigung
2	Schweizerische Zeitschrift fur Vermessung
2	Sociologie A Historie Zemedelstui
2	Somerset Archaeology and Natural History
2	Studia Universitatea Babes-Bolya, Cluj, Geologia-Geographia
2	Surveying and Mapping
2	Tebiwa
2	Transactions of the Essex Archaeological Society
2	Transactions of the Honourable Society of Cymmrodorion
2	Transactions of the Woolhope Naturalists Field Club

Number of Articles	Titles
2	Turrialba
2	Uchenye Zapiski Blagoveshch. Gosudarsvennogo Pedagogskogo Instituta
2	Uchenye Zapiski, Moskovskiy Oblastnoy Pedagogicheskiy Institut
2	Uchenye Zapiski Turkmen, Universiteta
2	Universita Bari Annali Della Facolta di Economia e Commercio
2	Vestnik, Akademiya Nauk. SSSR
2	Vermess.-Techiy.
2	La Vie Urbaine
2	Voprosy Gradostr-Va
2	Water Resources Research
2	Weather
2	Yearbook of the Czechoslovak Academy of Sciences

(iii) GEOGRAPHICAL ABSTRACTS: SECTION F

Number of articles contributed from serial titles covered, 1972 (issues (1) and (2)

Number of articles	Title
28	Area
24	Journal of the Royal Town Planning Institute (formerly, Journal of the Town Planning Institute)
23	Official Architecture and Planning
15	Journal of Leisure Research
14	Socio-economic Planning Sciences
13	Town and Country Planning
11	Urbanisme
10	Professional Grographer
9	Environment and Planning
9	Informationen (Bad Godesberg)
9	Journal of the Urban Planning and Development Division, ASCE
8	Schriftenreihe Siedlungsverband Ruhrkohlenbezirk
8	Urban Studies
7	Canadian Geographer
5	Journal of Regional Science
5	Municipal Review
5	Water Resources Research
4	Cahiers de Geographie de Quebec
4	Economic Geography
4	Fennia
4	Geographical Magazine
4	Geographische Rundschau
4	Terra
3	Advancement of Science
3	Banca di Roma Review of the Economic Conditions in Italy
3	Bull. de la Societe Languedocienne de Geographie
3	Dissertation Abstracts International, A
3	Economie Rurale
3	Grands Amenagements Regionales
3	Petermanns Geographische Mitteilungen
3	Planning Outlook (N. Ser.)
3	Revue de Geographie Alpine
3	Sbornik Ekon Geografiya. Geogr Prom-Sti
2	AIDC Journal
2	Annales de Geographie
2	Annals. Association of American Geographers
2	East Midland Geographer
2	Economic and Social Review
2	Erdkunde
2	Int. Labour Review
2	Irish Geographical Studies
2	Izv. Vysshikh Uchebnykh Zavedeniy, Stroitel'Stvo Arkhitektura

Number of articles	Title
2	Mater. Samml. Agr.-Sozialeges
2	Meddelelser Fra Geografisk Institutt ved Norges Handelh[illegible]skole og Universitetet i Bergen
2	Regional and Urban Economics
2	Revue de Geographie de Lyon
2	Rev. Econ. Soc. (Lausanne)
2	Soviet Geography Review and Translation
2	Trudy, Tallinskogo Botanicheskogo Sada
2	Trudy Ural'skogo Politekhn in-ta
2	Turkish Economic Review
1	Administration
1	Albertan Geographer
1	Association of Pacific Coast Geographers, Yearbook
1	Bulletin de L'association des Geographes Français
1	Bulletin of the Illinois Geographical Society
1	Can. J. Agric. Econ
1	Die Neue Ordnung
1	Ekonomika Sovetskoy Ukrainy
1	Erde
1	Geoforum
1	Geograficky Časopis
1	Geografiya (Sofia)
1	Geographical Journal
1	Geography
1	GLC Intelligence Unit Quarterly Bulletin
1	Hommes et Terres du Nord
1	Iktisadi ve Ticari Ilimler Dergisi
1	Iktisat ve Maliye
1	Industries et Travaux d'Outre-Mer
1	International Journal of Environmental Studies
1	International Review of Community Development
1	Journal of Transport Economics and Policy
1	Land Reform, Land Instrument and Cooperatives (Israel)
1	Meddelelser Egnsplanradet
1	Norois
1	Notes. Etud Documentaires
1	Options Mediterranennes
1	Paysans
1	Progress in Geography
1	Promyshlennost' Armenii
1	Regional Studies
1	Reordenmento (Luanda)
1	Revue Geographique de L'Est
1	Revue de Geographie des Pyrenees et du Sud Ouest
1	Rivista Econ. Agr.
1	Science Journal
1	Scottish Geographical Magazine
1	Social Forces
1	Stroitel'stvo i Arkhitektura
1	Stroitel'stvo i Arkhitektura Leningrada

Number of articles	Title
1	Stroitel'stvo i Arkhitektura Uzbekistana
1	Tidsskrift for Samfunnsforskning
1	Vierteljahrshefte zur Wirtschaftsforschung
1	Water and Water Engineering
1	Zapiski Voronezhskogo Sel'skokhozyaystvo Instituta
1	Zeitschrift zur Wirtschaftsgeographie
1	Zeszyty Naukowe Universytetu Lodzkiego Nauki Ekonomiczne

APPENDIX E

BATH UNIVERSITY LIBRARY

EXPERIMENTAL INFORMATION SERVICE FOR PLANNERS

QUESTIONNAIRE

Now that you have seen the Experimental Information Service for Planners we would very much like to hear your views on it. It would help our research enormously if you would complete the following questionnaire.

Please mark one box only for each question except where otherwise indicated.

1. Name: 2. Code No:

3. Employing organisation (include name of department, section, branch, etc.)

4. Please list your qualifications which are relevant to planning.

5. Nature of work: (mark as many boxes as applicable)

practice ☐
teaching ☐
research ☐

6a. Do you subscribe to, or use, Geo Abstracts?

regularly ☐
occasionally ☐
no ☐

6b. Do you use regularly any other information service?

yes ☐
no ☐

If 'yes' please name:

7. How did you use the Experimental Service you received?

read thoroughly	☐
scanned through	☐
glanced at	☐
did not use	☐

8. FREQUENCY OF ISSUE

a. Do you think you received issues

too frequently?	☐
at about the right frequency?	☐
not frequently enough?	☐

b. If 'too frequently' or 'not frequently enough', please suggest reasons for your reply:

c. How frequently would you ideally wish to receive issues?

weekly	☐
fortnightly	☐
monthly	☐
every 2 months	☐
quarterly	☐

9. ENTRY FORMAT

a. Did you find the inclusion of keywords in each entry adequate for assessing the relevance of material in the service?

not adequate ☐
sometimes adequate ☐
completely adequate ☐

b. Would you have preferred abstracts?

yes ☐
no ☐

c. Would you have been satisfied with titles alone?

yes ☐
no ☐

d. Please give any further comments you have about the amount and adequacy of information in each entry:

* This page only was included in the questionnaires which were sent to planners who received styles with keywords.

9. ENTRY FORMAT

a. Did you find the abstracts:

not adequate? ☐
sometimes adequate? ☐
completely adequate? ☐

b. Would you have been satisfied with titles alone?

yes ☐
no ☐

c. Would you have been satisfied by titles with added keywords (by 'keywords' we mean words indicating the subject of the article)?

yes ☐
no ☐

d. Please give any further comments you have about the amount and adequacy of information in each entry:

* This page only was included in the questionnaires which were sent to planners who received styles with abstracts.

9. ENTRY FORMAT

a. Did you find titles alone adequate for assessing the relevance of material in the service?

not adequate ☐
sometimes adequate ☐
completely adequate ☐

b. Would you have preferred abstracts?

yes ☐
no ☐

c. Would you have preferred titles with added keywords (by 'keywords' we mean words indicating the subject of the article)?

yes ☐
no ☐

d. Have you any further comments about the amount and adequacy of information in each entry?

* This page only was included in the questionnaires which were sent to planners who received styles with titles only.

10. INDEX

Author index

a. Did you use the author index?

yes ☐
no ☐

b. If you did not use the author index was this because

you did not need to? ☐
it was not easy to use? ☐

Please state any other reasons:

Subject index

c. Did you use the subject index?

yes ☐
no ☐

d. If you did not use the subject index was this because

you did not need to? ☐
it was not easy to use? ☐

Please state any other reasons:

e. Would you have preferred any other type of index?

yes ☐
no ☐

f. If 'yes', please explain what type you would have preferred:

* This page only was included in the questionnaires which were sent to planners who received stules with an index.

10. INDEX

a. Would you have found an index useful?

yes ☐
no ☐

b. If yes, which of the following types of index would you have used?

author ☐
subject ☐
geographical ☐
keyword* ☐

*significant word appearing in the titles of the entries

* This page only was included in the questionnaires which were sent to planners who received styles without an index.

11. NUMBER OF ENTRIES

a. Did you find the number of entries in each issue

too few? ☐
about right? ☐
too many? ☐

12. COVERAGE

a. Would you have liked the service to cover

more journals? ☐ fewer journals? ☐
more books? ☐ fewer books? ☐
more reports or other semi-published materials? ☐ fewer reports or other semi-published materials? ☐

(mark as many boxes as appropriate)

b. Did you find the amount of foreign language material covered

too little? ☐
about right? ☐
too much? ☐

c. Please give any other comments you have about the choice of items covered:

13a. Taken as a whole do you rate the Experimental Service which you have received as

of no use to you? ☐
of little use? ☐
moderately useful? ☐
very useful? ☐

13b. How do you think that the Experimental Service could be improved to make it of more use to you?

14a. Would you subscribe to the Experimental Service if it were to become fully operational?

yes ☐
no ☐

14b. If you were to subscribe, how much per annum would you be prepared to pay for a personal subscription?

up to £2.50	☐
£2.50 - £5.00	☐
£5.00 - £10.00	☐
£10.00 - £15.00	☐
£15.00 - £20.00	☐
more than £20	☐

(NB Answers to this question will not of course commit you to buying any service that is introduced)

15. Without increasing the cost of an indexing or abstracting journal, it is not possible to have ideal coverage, abstracts, frequency of issue, etc. all together. In practice, an increase in frequency may mean poorer coverage, and full abstracts or indexing may mean a decrease in frequency.

a. Would you prefer:

a publication issued once a fortnight, with rudimentary indexes and no abstracts? ☐

or

a publication issued every two months with full abstracts and indexes? ☐

b. Would you prefer:

a publication issued once a fortnight but with very limited coverage? ☐

or

a publication issued every two months but with a wide coverage? ☐

c. Would you prefer:

a publication with wide coverage but no abstracts? ☐

or

a publication with a limited coverage but good abstracts? ☐

16. If the basic publication was issued every two months, with reasonable coverage and good abstracts and indexes, would you be prepared to pay extra for an additional publication, issued fortnightly, consisting of titles only, with keyword indexes?

yes ☐

no ☐

17. Please make any other comments you wish about any aspect of the Experimental Information Service for Planners:

Please return this questionnaire to Mr. J.M. Brittain, DISISS Project, Library, Bath University, Claverton Down, Bath, BA2 7AT, in the envelope provided.

If you still have any of the "mark up" sheets which were at the front of each issue of the Experimental Service, please return them, even if you had nothing to record.

Thank you for your help.

University of Bath

DISISS Research Project
(Design of Information Systems
in the Social Sciences)

Project Head: Maurice Line
Senior Research Fellow: Michael Brittain

Library
Claverton Down
Bath BA2 7AY

Telephone Bath 6941
Telex 449097

Dear Sir/Madam,

This is the last issue of the Experimental Information Service for Planners. I hope that you have found it of some value and that you will be able to assist us with evaluation, partly by filling in the tear-off sheets at the front of each issue and partly by completing the questionnaire.

I would be pleased if you would return the tear-off sheets and the questionnaire together in the pre-paid addressed envelope within the next three weeks. If at the end of three weeks you are still trying to obtain copies of items, please return the questionnaire and tear-off sheets as soon as you have obtained all these items.

Again, thank you for your help.

Yours sincerely,

Michael Brittain

Michael Brittain

EXPERIMENTAL INFORMATION SERVICE FOR PLANNERS. TEAR-OFF SHEET.

1	2		3			4			5			
Insert item nos. which looked relevant and/or worth following up	Did you follow up this item?		Where did you follow-up the item?			When you retrieved item did you find it			Was the item useful for you (mark as many as applicable)			
	a Yes	b No	a Library in own institution	b Public Library	c Other. Please specify	a Useful	b Not useful	c Could not obtain item	a Teaching	b Research	c Work as a planner	d General Knowledge

University of Bath

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Telex 449097

APPENDIX F LETTER ASKING PLANNERS TO PARTICIPATE IN THE EXPERIMENT

14 July 1972

An essential part of our programme of research into the design of information systems is the setting up and evaluation of a real-life information service. We have decided to operate an experimental service for planners; this will be run in conjunction with Geo Abstracts, who have recently produced a new section - Section F, Regional and Community Planning.

We shall produce a number of different versions of Section F of Geo Abstracts, varying frequency of issue, journal coverage, length of abstract, etc, and we are hoping to get the cooperation of about 200 persons in all fields of planning. We shall be pleased to send, free of charge, for a period of 6 months, one style of publication to each person who is willing to participate.

I should be very pleased if you would agree to participate in this experiment; I would ask you only to give your comments on each issue, and at the end of the experiment to fill in a short questionnaire.

I should be grateful if you would pass this letter to your colleagues, or let me know the names and addresses of other persons willing to receive the experimental issues and participate in our experiment.

The first experimental issue would be available towards the end of October, although we hope to be able to keep in contact with you between now and then.

Yours sincerely,

Michael Brittain

Michael Brittain

Section 5 analyses the gradual move of planning from physical form into social awareness. Greenbelt policies and the role of the CVA are described in relation to the onward movement of planning theory. Section 6 sets out planning policies during the 1940's towards defence development and towards urban blight. The renaissance of city planning is documented, and the 1949 Housing Act is described. Section 7 shows how during the 1950's planning ideology began to split. Problems became more and more complex. Planning needed to follow suit. Ideologies were needed to link transportation demands, regional change, suburban development and inner city decay. Section 8 describes the search for a new comprehensive in city planning, and also shows how central government intervention became more and more important.
- Brian Clarke

99R/0075 New tools for urban management. RICHARD S. ROSENBLOOM & JOHN B. RUSSELL, (Harvard University Press,) 1972. 298 pp, 18 figs, 3 tables, appendix. Price £4.00

The book is primarily concerned with methods of analysis that can be related directly to action by urban administrations and policy makers, principally, either operational analysis or systems analysis. Operational analysis is concerned with choosing the best of a specific set of means for accomplishing a specified purpose. The operational analyst works within a given institutional structure with given operational purposes. His work provides tools more often than 'advice,' providing the administrator with decision rules and procedures that will help him 1) reach his own conclusions about what ought to be done in specific recurrent situations, or 2) exercise better routine control over operations. Systems analysis is intended to produce advice on problems for which neither ends nor means can be considered fixed. The systems analyst may question the decision maker's goals and his definition of the problem. Systems analysis is a creative process in which the continuing interaction between ends and means may produce a new definition of goals, a new method of achieving them, or both. Yet, because of his concern with producing usable advice, rather than just conducting 'studies,' the systems analyst works within limited definitions of systems scope and with a limited time horizon. The authors believe that much discussion of the merits of more widespread use of analysis in urban management has tended either to advocate it without reservation or to reject its significance outright. They suggest that both conclusions are inadequate. Analysis is not a cure for chaos, but neither is it without value for hard pressed urban administrators. Two main questions are considered first, to what extent are operational analysis and systems analysis useful in the urban sector? And second, within the limits of their applicability, how can these methods best be introduced to practice so as to yield useful results? The discussion depends upon data presented for four case studies, an attempt to minimize unemployment in Dayton, Ohio, the location of a fire station in East Lansing, Michigan, the operation of a housing programme in New Jersey, and the construction of a new city at Columbia, Maryland. - after Authors

99R/0076 Community action in general improvement areas. J. L. GROVE, Town and Country Planning, 40 (6), 1972, pp 312-314, 1 refs.

Part II of the 1969 Housing Act, which gave local housing authorities a new and comprehensive power to deal with environmental decay, is, at last, after a painfully slow start, producing a body of experience. The term GIA has entered the jargon. Opinions on the subject are now fairly growing less dogmatic, and now is a good time to exchange experiences gained from the first wave of projects. - Author

99R/0077 Le Vaudreuil: an advance in the French new town concept. JOHN TUPPEN, Town and Country Planning, 40 (6), 1972, pp 309-311, 2 figs.

The concept of the 'new town' as a means of accommodating urban growth is a solution that has gained only comparatively recent acceptance in France. It was only in 1965 that official sanction to the idea was given with the publication of proposals for a series of new towns around Paris to absorb the greater part of future urban growth. Subsequently several provincial metropolitan areas have adopted the idea as part of their future planning policies.
- Author

99R/0078 Old cities live anew. O. SHVIDKOVSKY, Town and Country Planning, 40 (6), 1972, pp 321-324, 4 figs.

More than a hundred of Russia's oldest towns were recently put under preservation orders and all possible steps are being taken to preserve their treasures. - Author

99R/0079 Mass transport in Hong Kong. C. K. LEUNG, in: Asian Urbanization: a Hong Kong Casebook, ed. D. J. Dwyer, (Hong Kong University Press), 1971, pp 155-166, 2 tables, 2 figs, 14 refs.

An underground rapid-transit system would prove beneficial to Hong Kong, where space is precious, land uses mixed, and pedestrian traffic everywhere heavy, and the more so when it is realized that existing efficient use of conventional modes leaves little room for further improvement to satisfy increasing demand. A rapid-transit system would reduce transfers for travel between major areas and mitigate effects of increasing trip lengths resulting from large-scale migration of urban population to suburban areas and new towns. Throughout the last decade, the urban areas of Hong Kong have lost population to the suburbs and satellites, especially to New Kowloon and areas to the east of the airport. The fact that the faster rapid transit will compensate for some adverse effects of increasing commuting range may further encourage depopulation from inner city high density areas. - Author

99R/0080 Urbanization of land in the northeastern United States. H. W. HILL, Jr. & R. C. OTTE, Economic Research Service, U. S. Department of Agriculture, No. 485, 1971, 11 pp, fig, 4 tables.

The amount and quality of rural land urbanized in 90 counties in the northeastern United States were estimated by use of airphoto comparison analysis. About 85 per cent of the land shifting from rural to urban use went into residential use with the remainder going to industrial, commercial, institutional, and recreational use and for airports. Residential use was mainly of the open type, that is, averaging above 0.5 acres per dwelling. About 70 per cent of the land urbanized was cropland. Land going to urban use was largely the better farmland - about 80 per cent was of land use capability classes I, II and III. Overall, about 0.22 acre of land was converted to urban use for each person added to the population.
- from WAERSA

99R/0081 Industrial parks: their characteristics and the need for classification. D. A. SMITH, A.I.D.C. Journal, 7 (2), 1972, pp 43-51, 2 refs.

99Q/0023 Problèmes des résidences secondaires. (Problems of second homes in Switzerland.) W. BRÜSCH, Options Méditerranéennes, 13, 1972, pp 105-109, 3 figs, refs.

Environmental disruption - Water supply - Waste disposal.

99Q/0024 La prise en compte du support naturel dans l'aménagement d'une région méditerranéenne en profonde mutation. (Taking account of the natural environment in the management of a rapidly changing region of the Mediterranean - greater Marseilles.) JEAN ECOCHARD, Options Méditerranéennes, 13, 1972, pp 88-93, 3 figs.

99Q/0025 L'habitat méditerranéen: traduction de l'influence d'un système de valeurs sur la maîtrise d'un milieu. (Settlement in the Mediterranean region: the translation of a system of values into the environment.) ANDRÉ HERQUIN, Options Méditerranéennes, 13, 1972, pp 83-87.

Evolution - Perched villages - Bastides - Medieval towns - Second homes.

99Q/0026 Recent U.S. shoreline studies and their relevance to Mediterranean coastal planning. ROY MANN, Options Méditerranéennes, 13, 1972, pp 80-81.

99Q/0027 American city planning. MEL SCOTT, (University of California Press), 745 pp, figs, tables, bibliography.

Urban environment - Boston - Chicago - Zoning - New towns - Green belt - T.V.A.

99Q/0028 New tools for urban management. RICHARD S. ROSENBLOOM & JOHN R. RUSSELL, (Harvard University Press), 1972, 298 pp, 18 figs, 4 tables, appendix. Price £4.00

Operational analysis - Systems analysis - Dayton, Ohio - Michigan

99Q/0029 Community action in general improvement areas. J.L. GROVE, Town and Country Planning, 40 (6), 1972, pp 312-315, 3 refs.

Environmental decay - Housing Act (1969).

99Q/0030 Le Vaudreuil: an advance in the French new town concept. JOHN TIPPEN, Town and Country Planning, 40 (6), 1972, pp 309-311, 2 figs.

New town - Paris - Urban growth.

99Q/0031 Old cities live anew. O. SHVIDKOVSKY, Town and Country Planning, 40 (6), 1972, pp 321-324, 4 figs.

Russia - Preservation.

99Q/0032 A test of a model of administrative areas. BRYAN H. MASSAM, Geographical Analysis, 3 (4), 1971, pp 402-406, table, 15 refs.

Ontario - Economies of scale.

99Q/0033 Land use planning. E.F. ROBERTS, (Mathew Bender, New York), 1971, 1360 pp, many figs, refs, appendix, Price $17.50.

United States - Nuisance control - Community - Urban renewal.

99Q/0034 Waste disposal: IPC/IPHE symposium on industrial wastes. ANON. Surveyor, 140 (4187 & 4188), 1972, pp 10-11.

Pollution prevention - Industrialists - Local authorities.

99Q/0035 Waste disposal: London experience. M.D. KAVANAGH, Surveyor, 140 (4187 & 4188), 1972, pp 12-14, 4 photos.

Bromley - Refuse collection - Division of responsibility.

99Q/0036 Waste disposal: a better deal for Scotland? ROBERT GRAY, Surveyor, 140 (4187 & 4188), 1972, pp 21-23, photo.

Cleansing authorities - Incineration - Sewage.

99Q/0037 Waste disposal: getting organised. KEITH J. ROBERTS, Surveyor, 140 (4187 & 4188), 1972, pp 23-25, 2 photos.

Local government reorganization - Research needed - Forward planning.

99Q/0038 Ramapo. ISRAEL STOLLMAN, Planning (American Society of Planning Officials), 38 (6), 1972, pp 108-113.

New York - Growth regulation - Zoning ordinance.

99Q/0039 Let's stop romancing regionalism. RICHARD F. BABCOCK, Planning (American Society of Planning Officials), 38 (6), 1972, pp 120-124.

Federal government (U.S.A.) - State government.

99Q/0040 New life for Tame Valley. GRAHAM ASHWORTH & RAY WOLFENDEN, Built Environment, 1 (4), 1972, pp 255-258, 6 figs.

Open space - Contrived landscape - Increased leisure.

99Q/0041 Urban space and structures, eds. LESLIE MARTIN & LIONEL MARCH, (Cambridge University Press), 1972, 272 pp, figs, bibliographies, Price £6.00.

City - Urban areas - Models - Spatial structure - New towns - Planning.

99Q/0042 Some aspects of model building in the social and environmental fields. BERNARD BENJAMIN, Social Trends, 2, 1971, pp 24-30, 3 refs.

Population - Medicine.

99Q/0043 Social indicators: health. A.J. CULYER, R.J. LAVERS & ALAN WILLIAMS, Social Trends, 2, 1971, pp 31-42, 6 tables, 31 refs, appendix.

Quality of life - Bibliography.

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